College and University Business

GUEST EDITORIAL

Is Federal Aid Our Only Hope?

FOR THE IMMEDIATE FUTURE, THE ANSWER TO the foregoing question seems to be "Yes," that is, if we decide it is worth the cost. The trend in the thinking of most vociferous groups in our national life seems to be toward more dependence upon federal assistance not only for education but for most civic necessities. Addresses, papers, articles, books and discussions lead one to the conclusion that colleges are counting heavily on federal aid in the next decade.

Privileges established in the G.I. Bill of Rights have given many people the idea that the federal government is under an obligation to grant free higher education to all youths of the nation. Enrollments in colleges are continuing to mount, and national surveys indicate that the peak enrollment of veterans will not be reached for several years. The Office of Education estimated a college enrollment in November 1946 of more than 2,000,000 students, and Dean Partch of Rutgers has predicted an enrollment by 1960 of 3,700,000 students.

To obtain the necessary additional plant facilities alone is a staggering problem. Professor Morey of Illinois has suggested a minimum figure of $5500 as the average capital outlay per student required to expand existing facilities. For this at least $1,000,000,000 a year for the next ten years will be needed. Current operating expenses for teachers, administration, libraries and plant are running under $1,000,000,000 a year but should rise to at least $2,000,000,000 by 1960. Two and a half to three billion dollars a year is coming from—where?

The source of income pattern before the war, based on averages of all institutions, was briefly this: one third was provided by students, one third, by state and municipal governments; the other third, by endowments, 12 per cent; private gifts, 8 per cent; federal and other sources, 13 per cent. There is no available comparison with postwar statistics. But it is known that the G.I. is putting many institutions in the red because the federal government is paying only 60 per cent of his cost.

According to predictions, then, the problem will be to raise more than three times as much money for higher education than was available during the best prewar years. How can it be done? For public institutions larger appropriations will be essential. In private institutions tuition will have to be increased. In both, fees will have to be increased. Campaigns will have to be conducted by both for more small contributions from a larger number of people to make up for the large gifts formerly contributed by wealthy people. If these measures are not adequate, there will be no recourse except to seek funds from the federal government.

For what uses shall they be sought and how can they be obtained without federal control? Experience indicates that the colleges cannot receive blank checks without federal restrictions. There are now institutions under state and local control that are subject to the most rigid kind of governmental interference. Policies that circumscribe flexibility in spending funds and in making faculty appointments, for example, can easily be extended to dictate what shall be taught, how and when.

There are purposes for which federal money may be sought and ways of using the funds that offer a strong challenge to educators to find agreement among themselves and thus present a united front. If this cannot be done, it is unlikely that a formula interposed by Congress will be found agreeable to educators.

As a starter, two methods have been proposed on which educators might agree. The first of these consists of federal loans for the erection of self supporting, self liquidating projects, such as residence halls and dining rooms. Amortization over a period of twenty-five years at a nominal interest rate would make expansion possible even among private institutions. Surely college business experts should be able to manage such projects without going into the red. The second method consists of a new formula for federal scholarships which would afford every boy and girl of exceptional talent an opportunity for college training. There should be no restrictions against Jews, Negroes, Catholics, Protestants, Italians, Yankees, Southerners or graduates of private high schools. A scholarship student should be free to attend an institution of his own choosing, and the allowance should be sufficient to eliminate economic worries for both the student and the college.—J. HARVEY CAIN, *accounting officer, Board of Higher Education, City of New York.*

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MURRAY P. HORWOOD, professor of sanitary science at M.I.T., has specialized in bacteriology, sanitation and public health matters since 1913. For the last thirty years he has been actively engaged in making public health surveys for cities over the entire United States, in addition to his teaching responsibilities at M.I.T. He is author of three books on public health and sanitary science and has published more than 50 papers and reports on sanitation and public health. Dr. Horwood was a member of President Hoover's conference on housing and home ownership. . . . LAIRD BELL, prominent Chicago attorney, is a member of the board of trustees of two institutions of higher education: the University of Chicago and Carleton College. He is president of the board at Carleton.

E. C. JACOBSON

EDWARD C. JACOBSON, treasurer of St. Olaf College, who describes operation of a radio station in a liberal arts college, is a civic leader, was organizer of the local Community Chest and gives generously of his time to other projects of similar nature. He's an active Rotarian; for recreation he putters around his basement woodworking shop. The St. Olaf College Station began experimental broadcasting as early as 1918. The station was officially licensed by the Federal Communications Commission as WCAL on May 6, 1922.

A. B. LAMBDIN

A. B. LAMBDIN, business manager of Connecticut College since 1932, has had extensive experience in college and university finance and administrative problems. He was at one time quartermaster general for Connecticut, a member of the city council of New London and president of the board of trustees of Williams Memorial Institute, a secondary school for girls. A World War I aviator, he served during World War II as a colonel in the finance department of the army. . . . H. C. GREGG, business manager of Syracuse University, previously has been active in college business officer circles as business manager of Albion College and Iowa State College. He gained extensive experience in making surveys of colleges and universities as a member of the staff of the Methodist Board of Education for two years and for a similar period was with the North Central Association of Colleges and Universities. During that time he co-authored several books.

CARL F. MACK

CARL F. MACK, University of Chicago horticulturist, is responsible for the planting and maintenance of grounds at that institution. He has spent thirty-five years in horticultural and landscape construction work, fifteen of those years with the University of Chicago. Trained in general horticulture and landscaping in Germany, he has made a special study of plants in Mexico and California and, of course, the United States. He particularly enjoys the outdoors or "anything that pertains to nature."

Looking Forward

On-the-Job Training

RECENT EXPANSION OF FACILITIES HAS BROUGHT into the college family a host of new employes. Many on university pay rolls have an inadequate background of training and experience. The need for their services makes it necessary to train them on the job.

Job training requires organization. There has been a tendency in some colleges to assign the new employe to an old employe and let it go at that. Just because a man, or woman, is an excellent cook is no assurance that he has the teaching or counseling skills properly to train an assistant. The reverse may be true, as the old employe may resent a new employe as a threat to his security and may train him improperly or not at all.

Many technics can be employed in breaking in new personnel. Staff meetings may be held to outline operational technics; charts and other visual aids may be employed; individual conferences with department heads may be utilized, or the old worker-new worker team may be employed. A directed conference in which the department head presents a specific problem and elicits specific recommendations as to technics to be employed in tackling the problem is another valuable method.

Some surveys of college in-service training have shown that more time is spent on training the student employe than is spent on training the permanent employe. If a worker is expected to be a productive member of the staff for ten or twenty years or more, it is to the interest of institution and employe to see that he receives the best training.

College Unions Are Tailor-Made

WITHIN RECENT MONTHS A LIVELY INTEREST IN planning and constructing college union buildings has been noted. This is an encouraging trend on the part of college administrators as it indicates an appreciation of the value of leisure-time activity as an integral part of college life.

Informal education, such as is provided in the typical college union, can do much toward developing a student's capacity and potential as a well balanced member of society. It is hoped that more recognition of the college union's educational function will be appreciated by the builders of college curriculums in future months and years.

In order to provide the proper surroundings for college union activity, a building specifically designed for the purpose is a fundamental requirement. Recent surveys indicate that most union buildings have not been adequate to meet the demands placed on them. One observer advises that "in planning the building, make it as large as possible in provision of necessary facilities—and then double the space." College union directors seem to agree that their buildings did not provide adequate space and program the day they moved in, for the union truly has become the student center of the campus.

Many mistakes in designing and constructing college union buildings might have been avoided had architects and building committees utilized the consultation services available in the field. The Association of College Unions, through its consulting service in Madison, Wis., has done a great deal to improve design and planning. Each college requires a tailor-made building to fit its peculiar needs. A duplication of the floor plans of a neighboring institution may do no more than duplicate the mistakes.

Organize, Deputize and Supervise

REPORTS MADE AT THE WORK CONFERENCE OF the department of higher education, National Education Association, indicate some resistance on the part of administration to the proper delegation of authority to persons employed to perform administrative functions.

A guiding principle in determining the type of internal organization is the span of control. Span of control refers to the number of persons who should report to the person next in authority in the administrative line. Once this principle has been established and recognized, it is in the hands of those charged with supervisory responsibilities. "Organize, deputize and supervise" briefly points up the three functions of an executive. He must first organize the work to be done, assign or deputize specific personnel to perform the work required and then supervise the work regularly.

The college administrator who attempts to do everything himself because he fears his position will be weakened by relinquishing some of his duties is rendering his institution a disservice and may be headed for a physical breakdown.

LAIRD BELL
President, Board of Trustees
Carleton College

ADMINISTRATION AS VIEWED BY A

IN CONSIDERING THE RELATION OF the trustees of an endowed institution with its officers, it is necessary at the start to reject any exact parallel with the directors of a commercial concern.

The fact is that the system by which an educational institution is committed to a board of trustees is a unique American device. In most of the rest of the world educational institutions are controlled by governments or by churches or, in some instances, by the faculty members themselves on a sort of proprietary basis. But the system accepted in America is quite a different one and, when one examines it, a rather extraordinary one at that.

TRUSTEES HAVE GREAT POWER

The typical board of trustees of an endowed college or university consists primarily of laymen. Technically, these laymen have complete control and management of the institution. They are normally a self perpetuating body, although some have provision for a little alumni or other specified representation.

These laymen can legally determine the *kind* of institution and *how* it shall be run. They are, of course, controlled by the terms of any endowment or other gifts but within that broad general classification they hold the purse strings and can direct the expenditures at their pleasure. They can make policy and change it. Theoretically, they can hire and fire. They can hang on during their lives. They can pick their successors. And it is almost impossible for them to do anything so bad that they can be removed.

In spite of this great residual power, however, we seldom hear of abuses. There have been interferences, of course, with academic freedom. But despite the hundreds of institutions in the country the list of those which the A.A.U.P. has condemned is relatively a short one.

Why does this system work as well as it does? The answer, in part, is merely tradition. A certain distinction goes with being trustee of an educational institution, large or small, and it is the kind of distinction that many men like. On the other hand, they do not have pronounced views on educational matters and are inclined to leave the educational activities of the institution in the hands of the assumed experts. I am afraid an exception must be made in the case of "pink" professors during times when witch hunting is a favorite sport for legislators, newspapers and the American Legion. For the most part, however, it is safe to say that trustees do not interfere *much* with educational matters in their institutions.

One cynically inclined might say the reason power has not been abused in these fields is that the power has resided in the hands of those who had no burning interest. They approve of education in a general way and like to be thought of as college trustees but usually are not concerned with such issues as whether education should be liberal or practical.

The net result is that the scholars have been left largely to themselves to develop as good institutions as their resources and talents will permit. At the same time, the trustees have been content to enjoy whatever distinction goes with the position, keeping an eye on "Who's Who" and their obituaries and giving really substantial amounts of time and money

TRUSTEES SHOULD DETERMINE POLICIES, GIVE ADVICE AND THEN KEEP SILENT

Trustee

to an institution without abusing the power that really is theirs.

In other words, a trustee of an institution is genuinely a trustee, holding title and exercising his talents for the benefit of someone else and, unlike the ordinary trustee, expecting no compensation except in St. Peter's records and in a little esteem from his fellowmen.

It is for these reasons that, in the academic side of college and university administration, analogies between the trustees of an institution and the directors of an ordinary business corporation do not hold.

On the business side of the institution, however, there is justification for developing parallels with business organizations. If it is a question of the investment of funds, of the construction of buildings, of maintenance, repairs and the like, the trustees are obviously better equipped to judge these problems than they are to pass upon curriculums and they should take more responsibility as well as be capable of giving greater help.

The uninitiated are likely to underestimate the range of business conducted by the business manager of a college or university. The budget of an institution like Harvard outranks that of many a sizable business. A typical liberal arts college, regrettably, has no such colossal figures to deal with but nearly every *kind* of activity known to the big university presents itself for handling in the smaller institutions. Without attempting to be exhaustive, it is clear that the business head must run a good hotel and a good boarding house, be a power plant engineer, operate laundries, be a master roofer and plumber and perform as a landscape architect and gardener. Sometimes he must have experience that would be useful to the manager of an opera troupe in pacifying the assorted temperaments of faculty members, to say nothing of their wives.

The business head of an institution must be also a skilled investor, able to realize a handsome return on the institution's money without endangering the principal. All in all, it appears to be a fairly exigent job.

AVAILABLE FOR CONSULTATION

Normally on a campus there are not many upon whom the business head can lean for help in these varied fields and he has precious little time for traveling around and consulting his fellow technicians about their common problems.

It is in this field, therefore, that trustees can really make a contribution. A well selected board would have members who could give sound advice on conventional investments, on real estate and on special investment situations. It would have someone with construction experience and someone with experience, or access to experience, in connection with many of the other activities of the business head. This experience should be the administrative officer's for the asking.

There is a lurking danger that if the trustees are called upon too often they may find themselves becoming involved in too much detail and, in effect, running the institution. This is clearly bad business organization. Directors of a normal business organization appoint the officers and then hold each responsible for performance in his field. The directors hold themselves out as available for consultation and help but, particularly in a college, they should scrupulously avoid going beyond the determination of policy and the rendering of advice.

DEMAND GOOD PERFORMANCE

It is not always easy to draw this line. The more interested a trustee is the more likely he is unconsciously to try to determine details that should be within the sphere of the administrator only. It is easier to decide what a janitor should have right now than it is to frame a good pension plan for him.

The corollary of this is that the board of trustees is entitled to be fairly demanding of the administrative officers. There are good reasons for the protection of tenure of professors, even when they are not too good; the principle may lead to deadwood and sterility but trustees are willing to pay that price for independence and freedom on the academic side.

No such considerations apply on the business side. The only tenure that the administrator should have is tenure during good performance. The trustees should set reasonable standards and demand performance accordingly. When that is not forthcoming, the administrator should have no complaint that he is invited to take his talents elsewhere.

Annuities • Group Life Insurance • Group Hospital and Surgical Insurance • Health and Medical Service

WHAT STAFF BENEFITS DO YOU PROVIDE?

H. C. GREGG
Business Manager, Syracuse University

THE FACT THAT EMPLOYES OF EDUcational institutions are not eligible to participate in the federal Social Security program is generally known. The extent to which social security provisions, such as retirement annuities, group life insurance and insurance providing funds for hospital, surgical and medical expenses, are being made by colleges and universities for their staffs, however, is not a matter of public record. I reported a study of this subject at the last meeting of the Eastern Association of College and University Business Officers in Boston in December 1946.

A survey of the 146 institutions affiliated with the association in 1945 was conducted by mail. Included in the study were some of the leading educational institutions in the eastern portion of the United States as well as Canada.

Usable data supplied by 111 institutions showed the nature and extent of institutional participation in various social security measures as follows: annuity programs, 103; group life insurance, 55; group hospital insurance financed in whole or in part by the employer, 28; group hospital insurance financed wholly by the employes, 80; insurance for surgical benefits financed wholly or in part by the institution, 27; insurance for surgical benefits financed wholly by staff members, 24, and institution sponsored medical service, 15.

ANNUITIES

Retirement Ages. Twenty-two different plans relative to retirement ages were reported by 107 of the institutions. Of these, 62 retire staff members at 65; 12, at 70; seven make retirement optional at 65 and compulsory at 70, and five retire staff members at 68. In five institutions, retirement ages for women staff members are younger than those for men, the difference being about five years. While a great variety of practices in this respect was reported, it is interesting to note that almost all the institutions had definite plans.

Ranks Eligible to Participate in Annuity Programs. Of the 98 institutions reporting on this subject, all included in their programs major administrative officials, deans and directors, professors and associate professors. In 95 institutions, assistant professors can participate and in 81, instructors are included. Fifty-three include clerical staff members; 49 permit junior administrative officials to participate, and 39 bring into the programs janitors and laborers. Thirteen institutions even include graduate assistants.

Rate of Accumulation of Retirement Funds. The 106 institutions supplying data on the rate of accumulation of retirement funds report 23 different plans. In 87 institutions, however, retirement provisions are 10 per cent or more of annual salaries. In 13 cases,

Table 1—AMOUNTS OF INSURANCE AT VARIOUS RANKS UNDER GROUP INSURANCE PROGRAMS IN EASTERN COLLEGES

Amount	Major Administrative Officials	Deans and Directors	Professors	Associate Professors	Assistant Professors	Instructors	Junior Administrative Officials	Clerical Staff and Laborers
$1,000.....	3	3	4	4	4	6	6	22
1,500.....	..	..	..	..	1	4	4	..
2,000.....	2	4	5	5	8	7	11	2
2,500.....	2	2	..	2	2	..	..	5
3,000.....	4	3	4	6	7	8	3	2
3,500.....	..	..	..	2	..	..	..	..
4,000.....	2	3	2	4	3	2	..	..
5,000.....	12	10	8	3	4	3	3	..
6,000.....	..	..	..	..	1	..	..	..
7,500.....	..	..	..	3	..	..	..	..
8,000.....	..	..	..	1	..	..	..	..
10,000.....	6	6	6	3	2	1	..	..
Twice annual salary, max. 10M.....	1	1	1	1	1	1	1	1
Based entirely on salary.....	2	2	2	1	1	1	1	1
Amount equal to annual salary.	5	6	6	6	6	6	5	5
Half annual salary.....	1	1	..	..	..	..	1	..

the rate is more rapid than 10 per cent annually. In six cases, it is 15 per cent and in two cases, 20 per cent.

Decreasing interest rates are causing institutions to speed up their rate of accumulation of retirement funds. This, coupled with the fact that salaries have not increased to the extent living costs have advanced, has caused employers to assume larger shares of the cost of the retirement programs.

Of the 106 institutions reporting annuity programs, 97 pay half or more of the total cost; two pay the entire cost; one pays 75 per cent; one, 72 per cent, and two pay 60 per cent; the remaining 91 share the cost equally with their staff members.

A few years ago interest rates were such that by investing 10 per cent of the annual salary in an annuity for a period of thirty years, an annuitant could be assured a retirement income for the remainder of his life of approximately half his average salary over the years. This is not now possible and there is every indication that the rates of annuity deposits in colleges and universities will be increased.

GROUP INSURANCE

The second step in the social security programs of colleges and universities is group life insurance. Approximately half the member institutions sponsor group life insurance and pay at least a part of the cost. This phase of social security had its origin in about 1911 or 1912. In the last third of a century, this social security measure has had an amazing growth. On January 30, 1946, 38,500 companies were sponsoring $25,000,000,000 worth of group life insurance on 14,000,000 employes.

Table 2—Charges Made to Staff Members for Group Insurance in 55 Eastern Colleges

Amt. Monthly Charges per $1000	Number Colleges
.....	5
$0.35.....	1
0.40.....	1
0.50.....	8
0.60.....	26
0.63.....	1
0.70.....	3
1.06.....	1
1.30.....	1
Depends on age.....	1
Graduated rates.....	1
Number not replying.....	6
Total.....	55

Table 1 shows amounts of insurance provided for staff members of various ranks in the 55 institutions sponsoring group life insurance.

Table 1 shows there is no uniformity in policies with reference to amounts of insurance provided for staff members of various ranks. It also shows that the tendency is to carry the larger amounts of insurance for staff members of the higher ranks.

Table 2 shows the extent to which staff members participate in the payment of group insurance premiums.

Table 2 shows that institutions do not have uniform policies with reference to the extent of staff participation in the cost of group life insurance. Approximately half of them, however, do require staff members to

pay 60 cents a month per $1000 of insurance, the institution paying the balance which, when dividends are considered, is usually somewhat less than the average rate paid by employers.

HOSPITAL INSURANCE

Hospital insurance is a relatively new form of social security protection. It had its beginning about twelve years ago and in 1945 had grown to huge proportions. Throughout the country in 1945, group hospital insurance was carried by 20,400 companies protecting 4,374,000 employes.

Of the 111 colleges and universities included in this study, 80 had group hospital plans financed by staff members and 28 had group hospital plans financed in whole or in part by the institutions. Of the 28 having group plans in which the employer shares in the cost, 23 reported that benefits are provided for administrative officials, deans and directors, professors, associate professors, assistant professors and instructors.

Twenty-two include, in addition, junior administrative officials, clerical workers and laborers, and in 20, all staff members except graduate assistants are eligible to participate. Of the 23 reporting, 22 include in the programs the families as well as staff members themselves.

SURGERY

The origin of insurance providing surgical benefits was almost coincidental with that of group hospital insurance. In 1945 such protection was provided by 18,900 employers in this country.

In this group of 111 institutions, 51 sponsor insurance providing benefits for surgical expense. Of these, 27 institutions pay all or a part of the cost. In 15 of the 27 institutions sponsoring contributory surgical benefits, 15 include families of staff members as well as staff members themselves. In 21 of the 27 institutions sponsoring this type of protection, all staff members are eligible to participate.

MEDICAL SERVICE

The last phase of the social security programs added to the list of staff benefits sponsored by the colleges and universities of this group is medical service. Fifteen of the 111 institutions included in the study maintain programs of medical service for staff members. Of the 15 maintaining this type of security, the entire cost is paid by six. In these, all staff members are eligible to participate and in six, the families are included. Six confine medical service to clinical treatment. Eight, however, include house calls in their programs.

In my opinion, this type of program has much merit and is destined to become an important phase of the future social security program in many colleges and universities.

While it is clear from this study that educational institutions still have some distance to go before their social security programs are all that may be desired, they are to be congratulated on the progress they have made, especially when consideration is given to the fact that there are so many urgent needs for every dollar in their financial budgets.

It is to be regretted that federal Social Security benefits are denied this large and important group of our citizenry. Educational administrators, however, are keenly aware of the values of such protection and there is little doubt but that the next decade will see much progress in the development of these important measures in our colleges and universities.

Social Center FOR SMALL COLLEGE

JOSEPH E. SPRING
Director, News Bureau
Illinois Wesleyan University

ILLINOIS WESLEYAN UNIVERSITY AT Bloomington has lacked a common meeting place for students, faculty and alumni for many years. President Merrill J. Holmes believes this lack has impaired the solidarity of campus spirit, a basic value of the small college.

Accordingly the Illinois Wesleyan Memorial Center is now being erected as the outstanding feature of a $1,100,000 building program, four projects of which are now in the building stage.

CENTRAL DINING ROOM

As President Holmes declares, "there is no more natural time and place for casual social contacts than during meals" so the center will include a central dining room large enough for the whole student body.

In addition to the dining room, there will be a lounge sufficiently spacious to serve for formal gatherings; a Room of Remembrance in which will be maintained a complete record of all Wesleyan men and women who served in World War II, together with appropriate plaques and mementos; a quiet room where in the rush of college life a student may take a few moments for spiritual reflection; new quarters for the alumni office; a reception room; headquarters for student and faculty organizations, and a bookstore.

The Georgian building is of brick with tile plastered interior partitions, steel windows and steel and concrete stairways. Floors are to be rubber tile in the kitchens, wide plank in the library and faculty clubroom and asphalt tile in the cafeteria, lobby and canteen.

Walls in the kitchens, cafeteria, canteen and restrooms will be of glazed tile; wood paneling will be featured in lobby and library, and plaster will be used elsewhere. Ceilings of acoustical plaster are specified for kitchens, cafeteria, canteen and lounge.

Steam heat via recessed convector radiators will be supplied by the university's central heating plant. A central system of fans and blowers in the attic will provide fresh air to the lounge, canteen and cafeteria, while exhaust fans and blowers will be installed throughout the building.

Indirect fluorescent lighting will be provided; the building will be piped for a public address system.

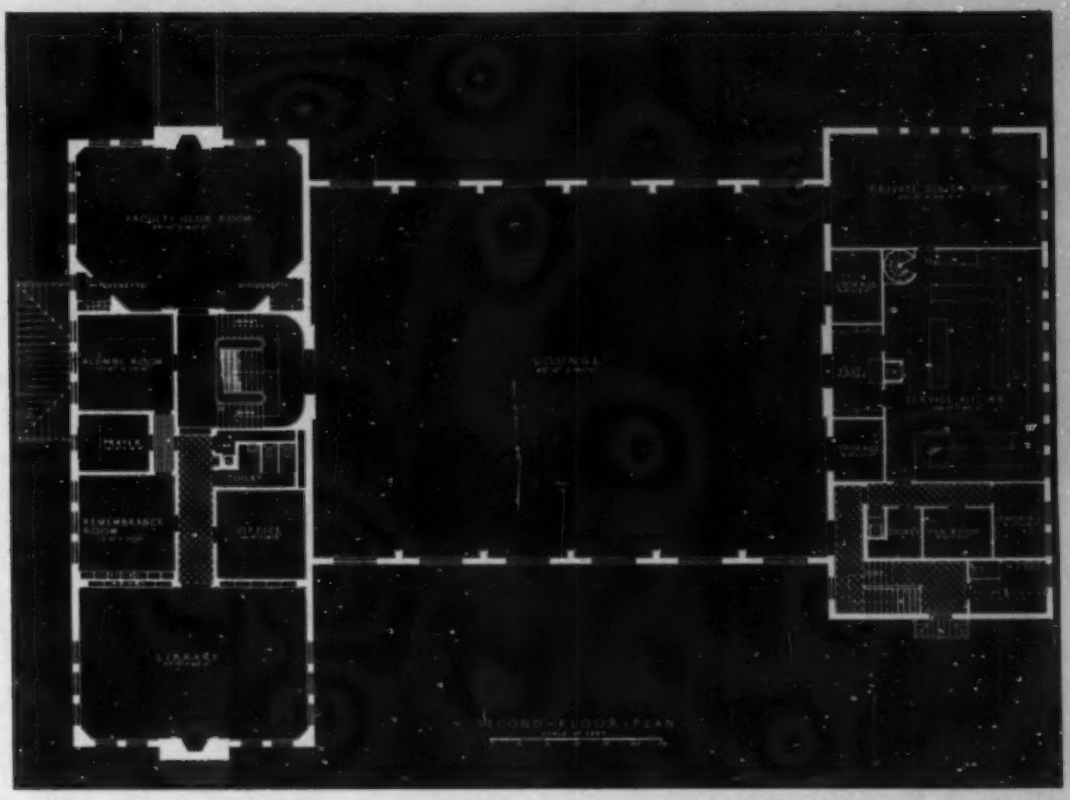
The two kitchens are to have an electric dumbwaiter, walk-in refrigerators and a refrigerated garbage room in which all dining room and other refuse will be frozen before being removed from the building.

An outstanding feature of the lounge is the series of laminated wood arches with a span of 67 feet from which will be suspended 16 feet above the floor a 16 foot wide canopy providing light in troughs and concealing fresh air ducts. Color schemes and furnishings are being handled by the contract department of a Chicago department store.

SPECIAL KITCHEN FOR BANQUETS

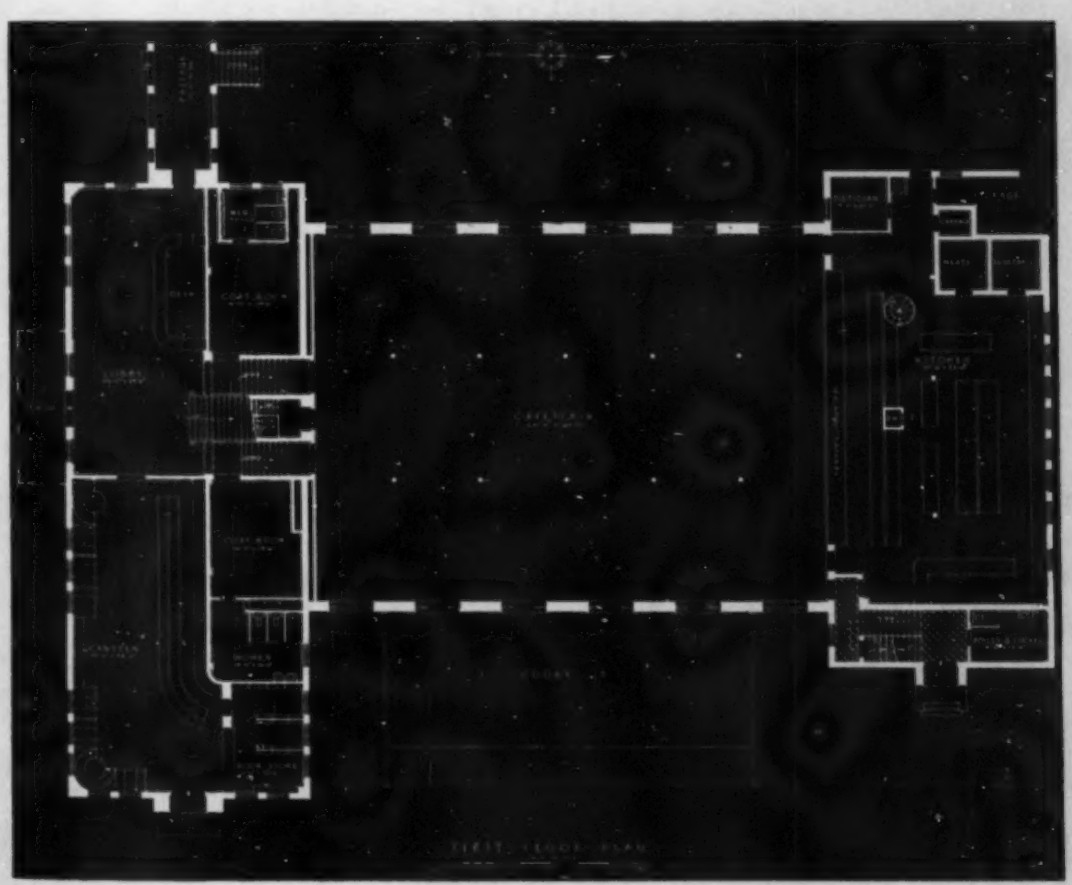
One of the two large kitchens will be used regularly in association with the cafeteria, while the other will be available for formal occasions when the lounge is employed as a banquet hall. The second floor kitchen will also be used as a home economics laboratory for experimental cooking and practical applications of meal planning courses.

The estimated cost of $375,000 includes the general, plumbing, heating, equipment and furnishings expenditures but not the fee of the land. The per cubic foot cost has been set at 79 cents. Schaeffer, Hooton and Wilson of Bloomington are the architects for all four current building projects.



BELOW: First floor plan reveals the size of the cafeteria which President Holmes regards as contributing more to college spirit than any other single service that could be added to the campus. The passage at the upper left connects the Memorial Center with the new residence hall for 122 women.

ABOVE: A series of laminated wood arches with a span of 67 feet, from which will be suspended 16 feet above the floor a 16 foot wide canopy providing trough light and concealing fresh air ducts, is an outstanding feature of the spacious lounge (or banquet hall) shown in the second floor plan.



NEBRASKA'S NEW ARMORY BUILDING

serves 5000 men in army and navy programs

ELLERY L. DAVIS
Davis and Wilson, Architects
Lincoln, Neb.

THE NEW UNIVERSITY OF NEBRASKA armory building provides quarters for ROTC for both the army and navy at the University of Nebraska and serves 5000 male students at the university.

Construction is completely fireproof with steel frame and steel joists.

The exterior is of face brick and stone; interior walls and partitions are unplastered cinder blocks; exterior windows are wood; stairways are terrazzo on concrete.

The flooring is generally concrete with tile in the toilet areas.

Walls are unplastered cinder blocks in natural color. Toilets are completely plastered with tile wainscot. Ceilings are of acoustical plaster in natural ivory color throughout.

The building is heated by steam from the university's central plant with cast-iron radiators and a zone system of temperature control with exterior and interior thermostats.

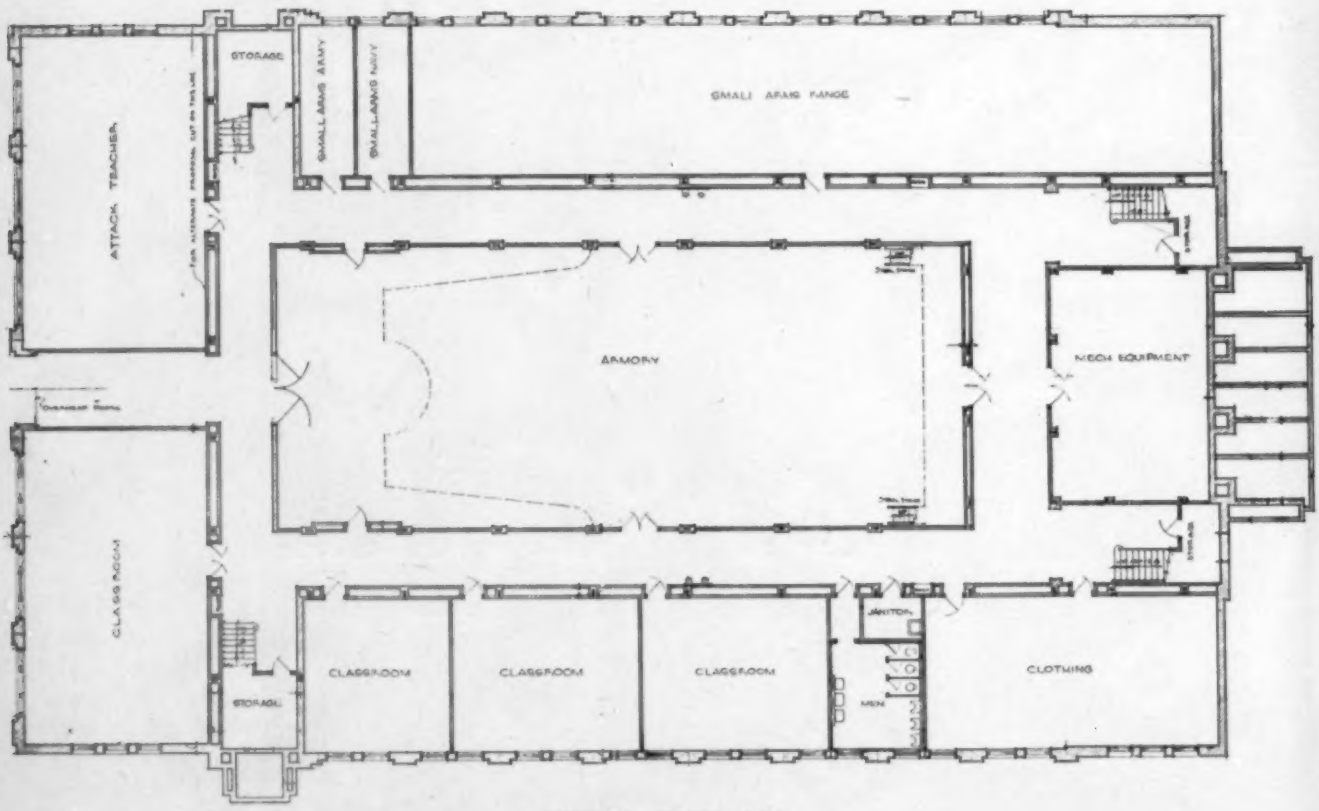
A complete winter air conditioning system is provided, the building being divided into five zones with separate fans and coils. Provision is made for a future connection to the university's central refrigerating plant for summer air conditioning.

Lighting generally is fluorescent.

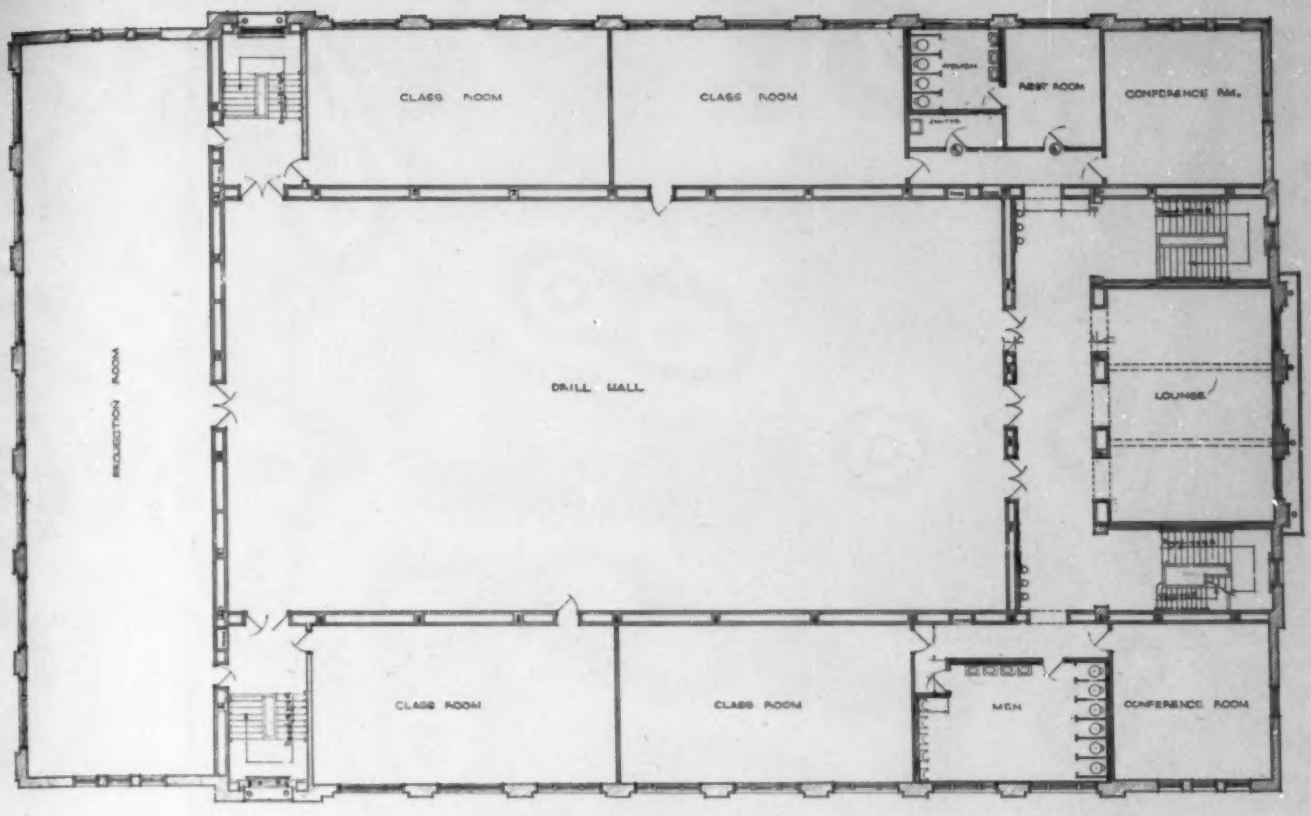
The building is equipped with the usual program gongs and intercommunications telephones. There are no elevators or dumbwaiters, no refrigeration and no kitchen.

The building contains slightly more than one million cubic feet and the following is a statement of the total cost, except site, fees, equipment:

Contract	*Amount*	*Per Cu. Ft.*
General	$230,452	23.0c
Heating, Plumbing & Ventilating	75,905	7.6
Wiring	7,995	0.8
Hardware	2,230	0.2
Light Fixtures	14,895	1.5
TOTAL	$331,477	33.1

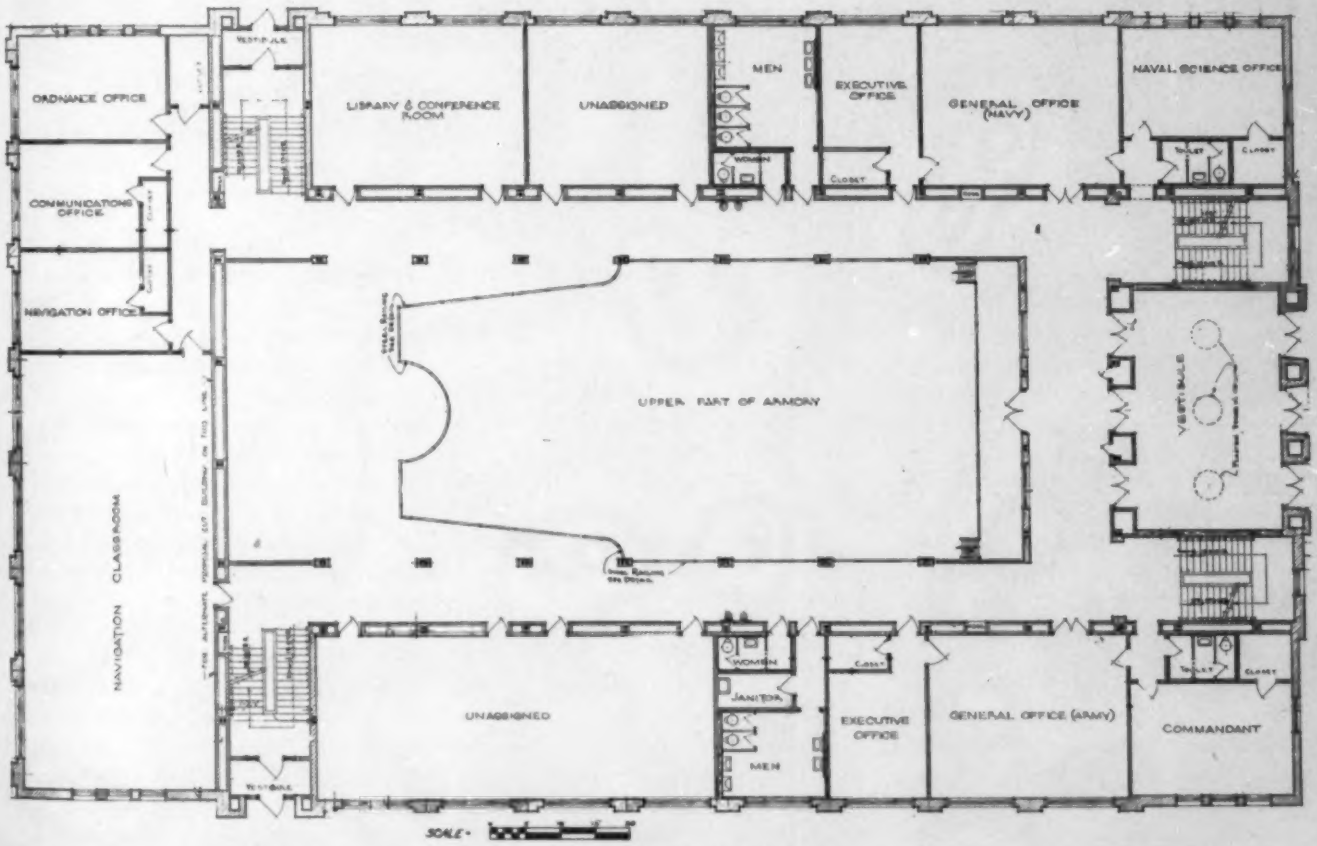


GROUND FLOOR PLAN



SECOND FLOOR PLAN

The requirements of both army and navy training are met by this new plant. The armory proper occupies the central portion of the ground and first floor plans and above it, on the second floor, is the spacious drill hall.



FIRST FLOOR PLAN

SMALL COLLEGE RADIO STATION

E. C. JACOBSON
Treasurer, St. Olaf College

SINCE 1922 ST. OLAF COLLEGE HAS operated its own radio station, WCAL, as an integral part of its program. A new radio station building was constructed in 1940 and has been used heavily in fulfilling St. Olaf College's objective of bringing to people in the Midwest messages of information, enjoyment, cheer and inspiration. WCAL has the unique distinction of broadcasting programs in seven languages: English, Norwegian, Swedish, German, Danish, Finnish and Icelandic.

BUILDING AND EQUIPMENT

The WCAL Building is a modern, substantial stone and concrete structure approximately 36 feet by 150 feet. One end of the building houses the Tormodsgaard Radio Mission House, an auditorium type of studio that seats about 250 people. It is used for church services and other programs at which an audience may be in attendance or when a large number of persons are involved in the program, such as a band or choirs. The Carrie Lee Organ is installed in this studio.

In the midportion of the building are a smaller studio, the general office and the control room, where the studio operator monitors and regulates the program. In the other end of the building are located another office, the news room and the transmitter. Through a teletype installed in the WCAL news room, the wires of the Associated Press bring news from the ends of the earth, twenty-four hours a day. The material is edited and broadcast by the station staff at various times during the day.

The WCAL transmitter was built in 1931 and at that time was a fine modern unit in every respect, but radio has developed more rapidly than has almost any other industry. To keep up with the major advances the transmitter has been improved a number of times and the equipment will be replaced with a new unit this summer. A special appeal for funds last winter brought in more than $60,000 for this purpose.

WCAL FINANCES

Questions have often been asked by friends of WCAL as to the cost of maintaining and operating the station and whether or not the income is sufficient to cover the costs. Legally, WCAL belongs to St. Olaf College, but in a very real sense the station be-

longs to the many friends who have helped to build it up and who are helping to support it from year to year.

Few people have an adequate idea as to what it ordinarily costs to carry on a broadcasting activity. To give some conception of it the statement may be made that if St. Olaf were to pay commercial rates to a station similar to WCAL for the number of hours that it broadcasts, the cost, conservatively estimated, would be $125,000 a year. That would be for time on the air only; all expenses in connection with the program would be in addition to this figure.

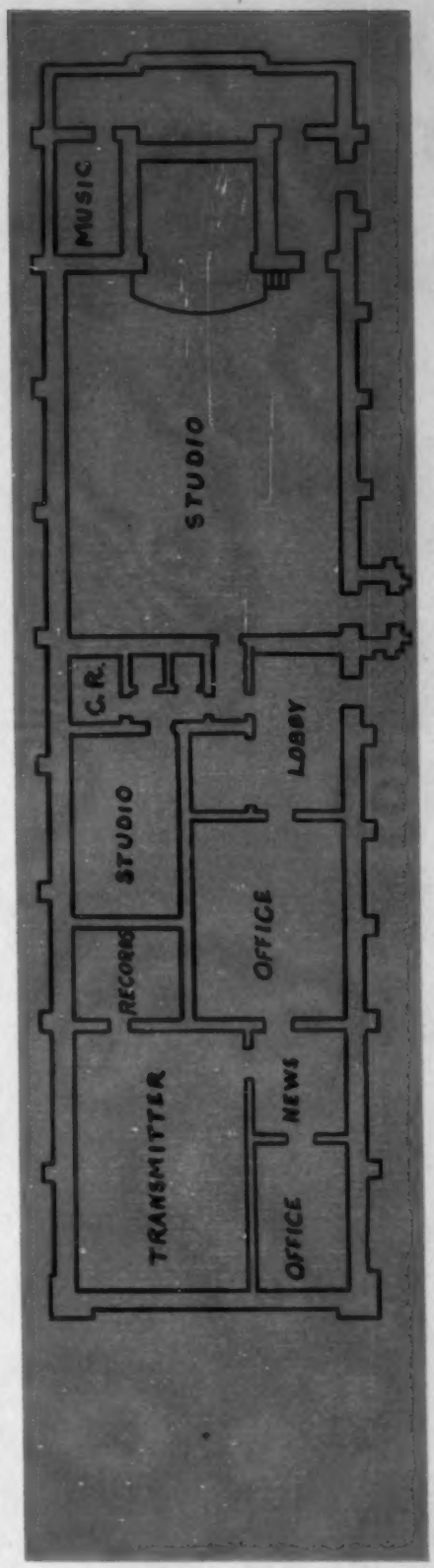
Another reason that WCAL costs are low is that WCAL friends have given funds for the construction of the building and equipment, so that it has not been necessary to pay out money for rentals or interest on indebtedness. WCAL now has a building and equipment conservatively valued at $100,000 made possible by gifts.

What does it cost to maintain and operate WCAL? In figuring costs many items have to be taken into account. First, there are the actual day-by-day operating expenses. Some of these are: salaries and wages, electricity for power and light, heat, water, toll charges for telephone line to the Minneapolis studio and for other broadcasts, news service, printing and stationery, other office supplies, postage, numerous items required for the operation of the transmitting equipment, recordings, telephone, telegraph, express charges and building maintenance.

But day-by-day operation expenses constitute only a part of the total costs. Radio equipment wears out and has to be replaced, and many replacements are costly because of their highly technical and complex nature. Radio equipment soon gets out of date and must be modernized, so a reserve has been built up to cover depreciation in the plant and the equipment.

For the fiscal year ending June 30, 1946, the actual expenditures for maintenance and operation were $33,269.42.

Now what about income? The station has no income from either taxes or advertising but does receive $4900 annually from the Evangelical Lutheran Church. Aside from this, WCAL is entirely dependent upon the gifts which it receives from its supporting friends.



Broadcasts in seven languages emanate from this 25 year old radio station at a small Minnesota college. The station is entirely dependent upon gifts; it now has an endowment fund.

For the fiscal year ending June 30, 1946, private gifts amounted to $27,218.85, and income from interest on endowment funds was $425.10. Totals for the 1946 fiscal year were as follows:

Income	$34,923.37
Maintenance and operation expense	33,269.42
Balance	$ 1,653.95

The balance was placed in the reserve for replacements or modernization. The budget for the current year is $37,877.

NEW SITUATION

The station anticipates extended coverage with the installation of its new transmitter. While at the present time WCAL shares time with KUOM, the station operated by the University of Minnesota, it has, for some time, been attempting to make arrangements that would enable it to operate on a full time schedule. During recent months the college authorities have been studying the possibility of installing a frequency modulation station, which would be operated in addition to the present AM or regular broadcast station.

The addition of FM broadcasting to the college program would enable the station to operate during both the day and the evening and would make possible greatly enlarged usefulness. Many new features and special programs would then be possible, and the station would be able to play an even larger rôle in the life of the community and the surrounding territory.

ENDOWMENT FUND ESTABLISHED

Several years ago the management of WCAL came to the conclusion that it was a good policy to establish an endowment fund for the station. It was decided that gifts of $100 or more from an individual person, family or organization should be set aside for endowment purposes. During the fiscal year ending June 30, 1946, the amounts set aside for the WCAL endowment fund totaled $4100.

Operating a radio station on a small campus costs money, but college trustees and administration are agreed that it is one of the most significant services rendered by the college to the people of its area. The college continually searches for opportunities to extend its broadcasting service rather than permit financial considerations to curtail its operation.

WHERE TO TURN FOR FUNDS

HAROLD WEEKS
Fund Raising Consultant
New York City

THE SOURCES OF PRIVATE GIVING ARE not drying up. They are changing.

Many great fortunes of 20 years ago have declined. Yet, in spite of the difficulties in accumulating wealth under our present tax laws, new fortunes are being acquired. The greatest change, however, has not been in this direction. It has been, rather, in the tremendous increase in the number of incomes from which substantial gifts can be made out of current earnings. On such giving, indeed, the tax laws place a premium. The deduction possibilities are so large that the actual cost to the donor often is but a fraction of the total gift.

In financing increased budgets, therefore, colleges and universities have a great opportunity to develop a "living endowment," based upon regular giving from income, to supplement the old line invested endowments.

The need for such action is imperative. The purchasing power of salaries of faculty and other personnel has declined seriously. All costs have risen. Pressing needs for replacement and development, deferred by the war, have not yet been met. Colleges and universities must increase their income. The greatest single opportunity for most of them is through increasing their living endowments, the contributions obtained from friends who give to them regularly from income.

SUSTAINED EFFORT REQUIRED

Institutions should and will continue periodic campaigns for endowment, capital needs and maintenance funds designed to finance them over a period of years. These, however, should be peaks which rise not from sea level but from a plateau of sustained well organized fund raising effort designed to provide additional income. Without this, some colleges will not survive.

The fundamentals of such a program are a well conceived fund raising plan supported by effective public relations and publicity. Fund raising cannot be successful unless it is based upon good public relations; therefore, the consideration of the public relations aspects of fund raising come first. Good public relations and publicity cannot be created over night. They should be on a continuous well established basis. Any college or university will fall far short of realizing the potentialities for broadening its base of support unless it succeeds in keeping alumni, students, parents, the community and the world in general in touch with what it is doing. Mere notices of college activities will not do the job. What is needed is a thoroughgoing demonstration, through every channel of public information, of the values of what the institution is doing.

Public relations and publicity are not two names for the same thing. Public relations is a course of conduct designed to win favorable public opinion. Publicity is the process of making this course of conduct known through the press, publications, radio and every other channel of public information.

Public relations is the business of every member of the college or university family. A public relations director can advise but only the board of trustees, the president, the faculty, the students and the alumni can create a sound basis for public relations. The best public relations policies, from the standpoint of fund raising, should be based upon honest conviction and careful consideration of what is the best interest of the constituency which the institution serves. This not infrequently means, particularly in times of stress, standing by principles which for the time being may be unpopular.

Publicity is a technic which calls for highly specialized ability. Colleges and universities can well afford to engage the services of highly competent individuals or staffs in this field. Many an institution, not only when engaging in a special campaign but also in its year to year efforts to obtain continuing support, finds itself badly handicapped by the fact that those who are asked to give have little comprehension of the nature and the value of the institution's activities.

Except for blind loyalty, a commodity not in excessive supply even among alumni, people do not give to a college or university for its own sake. They give, rather, to what can be accomplished through the institution. If thoroughly convinced of the value of what it is already doing, they will give to maintain it. But they will give much more if convinced that their gifts will open the way to greater and better things in the future.

"The big picture of the future" is essential to the most successful efforts in fund raising. To be effective, this "big picture" must be far more than a façade. If the gap is too great between what the institution is doing and what it is proposing to do, it will be difficult to convince prospective givers that the vision can be turned into reality. It is essential that plans be well and thoroughly thought out.

The big giver, in particular, wants to see the blueprints and figures for the future, as well as a sketch of the elevation. "The idea sounds fine but they really haven't got down to cases on carrying it out" has been written on the tombstones of many potential, large gifts.

Although a first essential, good public relations and publicity of themselves cannot be relied upon to bring in the required money. They must be followed up by well planned and organized fund raising effort.

CONCENTRATE WHERE MONEY IS

The most fallacious theory for broadening the base of giving is expressed in the idea that "the easiest way to raise a million dollars is to get a million people to give a dollar apiece." Actually, the easiest and most effective way to raise money is to concentrate on those who have money and most logically may be expected to give it. These people are concentrated primarily in two groups. The first is composed of the alumni. The second consists of persons of large incomes and those businesses and

industries that do or can benefit by what the college or university is doing.

The major potentialities for steady annual giving by alumni are to be found among persons with incomes of from $5000 to $25,000 a year. The preliminary figure of the Bureau of Internal Revenue for 1943 shows that there were 1,324,000 persons in the United States in this income range, an increase of 273,000 over the previous year. Their incomes totaled nearly $13,000,000,000, an increase of more than $2,000,000,000 over the previous year. They made deductible gifts of $257,862,000. These were war years but Internal Revenue collections in 1946 were $40,000,000,000 as compared with $22,000,000,000 in 1943.

The $5000 to $25,000 income group probably has not increased in like proportion but we may be sure it has not decreased and that college and university graduates proportionately outnumber others in this class.

ANNUAL ALUMNI GIVING

Annual alumni giving offers one of the best opportunities for developing a steady source of support comparable to income from endowment, in fact a living endowment of the finest type. Its effective development calls for far more than annual form letters, an occasional visit to main centers by the president or a beloved professor or, indeed, good publications that keep the alumni in touch with what the institution is doing and hopes to do.

Repeated alumni giving requires thoroughgoing organized effort, not only along class lines but also by committees organized geographically. The alumni in each region who will assume the responsibility of seeing personally as many of their classmates as possible and of writing personally to the rest can be found if effort is used.

All this cannot be done in one year. It is accomplished by a gradual building process, tact and perseverance rather than high pressure being used. The primary object should be to build up the maximum number of alumni contributors. The size of a gift will, to a great extent, take care of itself. The alumnus who acquires the habit of annual giving naturally tends to increase his gift if able to do so.

It is easy to gauge the effectiveness of an alumni fund. Eighteen to 20 per cent is low participation; 40 to 50 per cent is good, and anything beyond is excellent. There is a normal annual lapse of 30 per cent among alumni givers. The alumni fund organization, therefore, must pay just as much attention to obtaining renewals as to procuring new contributors.

Most colleges and universities are fortunate enough to have a number of alumni whose annual incomes are $25,000 or more. Except for those institutions having the wealthiest alumni bodies, however, more potential givers in the higher income brackets are to be found among non-alumni.

Again citing the most recent figures of the Bureau of Internal Revenue, there were 106,000 persons in the United States who in 1943 had incomes of $25,000 or more. Their total income was more than $3,000,000,000 and they made deductible gifts of $145,744,000. These figures showed increases over the previous year comparable to those for persons of $5000 to $25,000. The number of persons with incomes of more than $1,000,000, for instance, rose from 38 to 43; the number with incomes of from $500,000 to $1,000,000, from 186 to 190.

CARD FILE IS KEY

It will pay any college or university to build and maintain files on every person, firm or corporation from which there is a reasonable possibility of obtaining a gift of $1000 or more. The cards in this file should bear information concerning all factors that have a bearing upon the possibility of obtaining a gift—the prospect's interests, business connections, giving habits, hobbies, pertinent likes and dislikes, persons who can be helpful in cultivating his or her interest, records of everything done to arouse such interest and like information. The greater the potentialities and the likelihood of the prospective giver, the more nearly complete should be the information.

The building and development of such a file involve a highly specialized technic requiring extensive knowledge. Such a file cannot be organized merely by hiring a clerk or a roomful of file clerks. It should be developed under the guidance of an experienced fund raiser on the college or university staff or by a fund raising firm brought in to set it up and train those who are to be in charge.

Neither can the fund raising personnel alone do the work. Developing the information necessary to determine who are the best prospective givers requires the aid of the institution's top personnel on the board, in the administration, on the faculty and among the alumni and influential friends.

In regard to the most important prospective givers an individual plan of action should be developed in each instance. This includes deciding the nature of the gift which is to be sought, who is to be responsible for cultivating the individual's interest and by what methods.

In planning the approach to a corporation, always remember that its directors will hesitate to authorize a gift unless they feel they can justify it to their stockholders. They can do so if shown such things as the following: the gift is likely to profit the corporation through research or training of essential personnel; it will benefit the employes; it will benefit the corporation's public relations through serving the community or constituency with which the corporation does business.

The best giving case for a firm or a corporation can generally be built by carefully analyzing how what the college or university is doing, or wishes to do, benefits or will benefit the corporation. Anything that is not the natural function of the institution is likely to cost more than the value of any gift received because of it.

LARGEST GIFT IS SELDOM FIRST

Finally, remember that the best potential givers are those who have already given. Nothing is more important than making sure that a giver is thanked in such a manner that he feels his gift is appreciated. There is no better cultivation for another gift than seeing to it that the giver is told what has been accomplished with the money he has already given. A man's or a woman's largest gift is seldom the first one.

Is this a good time to raise money? College and university fund raising has, in general, followed the trend of the stock market. There is considerable uncertainty right now about market trends. There is no uncertainty, however, about the fact that colleges and universities having well organized, sustained, fund raising activities do better than others at all times. It is true also that those contemplating special campaigns never are able to take advantage of the "best time" unless they have started their preparations well in advance.

ESSENTIALS OF
Food Sanitation

MURRAY P. HORWOOD
Professor of Sanitary Science, Massachusetts Institute of Technology

NO DINING SERVICE CAN BE REgarded as satisfactory unless it is clean, attractive and safe. Two of the primary essentials for safe and satisfactory dining service are a safe and abundant potable water supply and a safe milk and cream supply. It is important also that every dining service be connected directly to a public sewerage system or to a suitable private means of sewage disposal. Moreover, there should be an ample supply of hot water at all times. Water used for sterilizing dishes should be maintained at 170° F. or higher; for other purposes, at 145°-150° F.

HANDWASHING FACILITIES NEARBY

Suitable handwashing facilities should be provided in all toilets, kitchens and locker rooms. Such facilities should include a combination faucet for hot and cold running water, a sanitary soap dispenser filled with soap at all times, individual paper towels and a suitable receptacle for used towels. Employes should be instructed in the importance of good hand hygiene, particularly after using the toilet, after coughing or sneezing into the hand or a handkerchief, after every time hands are soiled and before starting work in the morning and after lunch. Too, satisfactory showers should be available for the help. Clean, neat, attractive and washable clothes or outer garments should be provided for the kitchen help, cooks, bakers, waiters and waitresses.

A suitable system of collecting and storing all garbage and refuse is essential. Such wastes should be stored preferably in a separate room opening to the out of doors. The room should have a smooth and entire cement floor and the floor should have a drain connected to the sewer. Doors and windows should be thoroughly screened. The room itself should be ratproof. All refuse should be stored in clean barrels or other suitable receptacles; the garbage, in clean, metal barrels equipped with tight-fitting metal covers.

All receptacles should be placed 1 foot away from the wall on a metal pipe platform or a platform made of concrete strips. The platform should be at least 12 inches above the floor to facilitate cleaning and to prevent the creation of rat harborages. Running hot and cold water and a hose and nozzle should be available for washing garbage and rubbish barrels and for keeping the floor clean.

In regard to infections and poisonings associated with foods, if the foods are clean and wholesome when purchased; if they are bought from a reliable dealer; if meats are stamped "U. S. Inspected"; if the foods are handled by clean, healthy workers who are not carriers of disease, and if the foods are thoroughly cooked and served promptly or, if not served immediately, are refrigerated properly until they are ready to be served, then the danger of foodborne infections will be practically eliminated.

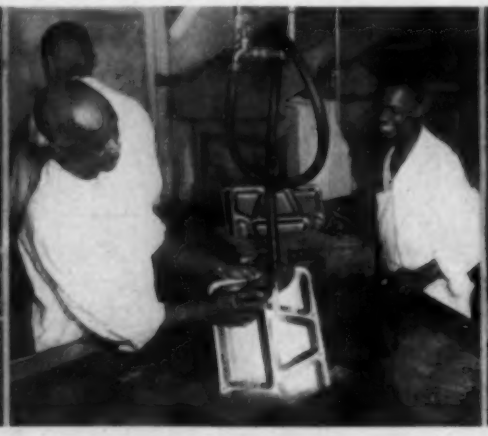
A hazard is introduced as soon as one of these provisos is lacking. Commercially canned foods are invariably safe and the record achieved in this respect in the United States is truly remarkable.

All food handlers should be free of disease and should not be carriers of disease. Individuals who have had typhoid fever preferably should not be employed as food handlers. This becomes mandatory if the laboratory examination discloses that such an individual is a carrier.

CHEST X-RAYS ANNUALLY

While public health officials do not favor the certification of food handlers following an annual medical examination mainly because the individual may become infected shortly afterward, it is becoming general practice to require all food handlers to have an annual x-ray examination of the chest for tuberculosis. Food handlers who are ill with respiratory disease of any kind

Scraping dishes



Pre-rinsing the dishes

Tray washer

should be encouraged to remain away from work until they are cured. Similarly, food handlers who have suppurating wounds on the hands, neck or any other part of the body should not be permitted to work until the wound has been thoroughly healed. Such individuals may be responsible for cases of Staphylococcus and Streptococcus food poisoning.

One of the most important requirements of good food sanitation is adequate and effective refrigeration. While health department regulations normally require refrigerating facilities to function at 50° F., it is preferable if the temperature of refrigeration is maintained at or near 40° F. The refrigerator should be clean at all times and the air should be in constant circulation. Foods should be separated to permit the cold air to circulate freely. They should not be packed too tightly for the same reason.

Subfreezing units should be available for meats, ice cream and other frozen foods. All eggs, bakery products, dairy products, custards, cream fillings, meats, meat products, fish, fish products, fresh vegetables, fruits, soups, sauces, gravy and even canned goods should be refrigerated when not in use.

It is a serious mistake to permit any raw or cooked foods to incubate in the warm atmosphere of the kitchen or service room when they are not being used. At such times, decomposition sets in and any infection that may be present is soon multiplied to a hazardous degree. The importance of refrigerating foods satisfactorily at all times when they are not in use cannot be overemphasized. Most food establishments frequently fail in this practice.

QUICK COOLING OF HOT FOODS

A serious fallacy widely held by many cooks is that prompt refrigeration of hot foods will produce souring. This view was undoubtedly correct in the days of iceboxes, especially in chests that were only partially filled with ice. The introduction of hot foods in such iceboxes caused the ice to melt and raised the temperature to a point favorable to bacterial multiplication and food spoilage.

With mechanical refrigeration, however, the conditions are different. While it may be uneconomical to introduce very hot foods into a mechanical refrigerator, it is undesirable to allow heated or cooked foods to remain in the warm atmosphere of the kitchen overnight or until they are stone cold. This is true of roasts, gravy, sauces, soups, custards and other foods. Such practices are dangerous and lead to food poisoning.

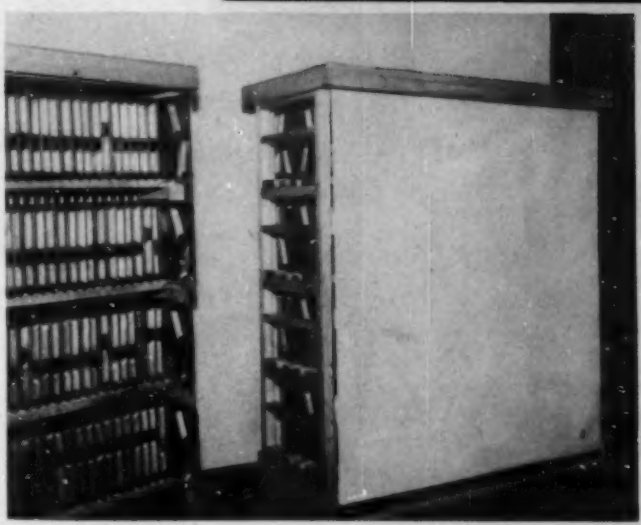
As soon as the excess heat of cooked foods has been dissipated, the foods should be placed in a mechanical refrigerator at 40° F. if they are not to be used immediately. Furthermore, every refrigerator should be equipped with a thermometer at all times and the temperature should be observed by a responsible person several times each day.

Milk should be served only in bottles and should be properly refrigerated at all times. It is a highly perishable food unless it is kept cold constantly. If the milk is not kept in a mechanical refrigerator at 40° F. it should be stored in a shallow pan containing ice water at all times. The level of the ice water should be almost up to the pouring lip of the bottle. The temperature of such milk will vary between 33° and 40° F. If the ice water is not up to the pouring lip, the bottom portion will be cold while the upper part which stands above the water may be warm. From time to time, it will be necessary to draw off some of the water to make room for additional cracked ice.

Cream ready for serving should be stored in a covered dispenser which is thoroughly refrigerated and insulated. The dispenser must have a smooth interior, be free of cracks, crevices and corners and be clean and sterile before it is filled. The dispenser should be emptied each day at the close of business, taken apart and thoroughly cleaned and sterilized. Every part of the dispenser that comes in

ABOVE: Ladle in one piece is more sanitary than two piece ladle. Crevices in the latter should be filled with stainless steel to prevent the accumulation of organic debris.

RIGHT: Arrangement of clean silverware at Graduate House dining service, M.I.T., is neat and safe.



LEFT: Nesting of trays should be avoided. Metal tray racks that allow for drainage are used in Graduate House dining room. Nor should dishes be nested unless thoroughly clean inside and out and entirely dry.

contact with the cream must be treated in this manner.

If necessary a strong chlorine solution should be employed to facilitate sterilization. After this has been done, the empty cream dispenser should be allowed to dry overnight. Precautions should be taken, however, to prevent contamination from the atmosphere as well as from vermin and rodents.

Foods must also be protected constantly against the depredations and contaminations resulting from rodents, vermin and flies. Flies may be a nuisance only during the fly breeding season but the other pests may be present in a food establishment throughout the year. While many establishments employ professional pest exterminators, such measures are only palliative and not corrective. In order to combat these pests effectively, it is necessary to combine constantly perfect sanitation with effective control measures.

Rodents and vermin will not become a problem if they do not have access to food and if all harborages are eliminated. However, these conditions can be attained only after constant and meticulous sanitary precautions.

The floors, table tops, workbenches and all equipment must be kept immaculately clean. All cracks and crevices must be eliminated wherever they occur. Cabinets, table tops, workbenches, equipment and almost everything used in the preparation, serving and storage of food must be made of smooth, nontoxic metal instead of wood. Even the steel runs of the doors of metal cabinets must be kept free of all food accumulations. All drawers should likewise be kept spotlessly clean. The various cutting and chopping implements and machines must be kept similarly free of all particles of food.

At the end of each day, all unused food should be stored in mechanical refrigerators and nonperishable foods should be placed in covered containers that are ratproof and verminproof. Only after such precautions can a food establishment be reasonably free of pests.

Storerooms should be organized so that everything will be kept at least 1 foot off the floor. For this purpose metal shelves or platforms should be provided. Beans, grains and dried foods should be stored in metal containers provided with tight fitting covers. Bags of flour and sugar should be stored on pipe platforms 1 foot from the wall and in small piles so as to prevent the formation of rat harborages and easy feeding platforms. The distance between piles should be 2 feet. All approaches from the floor and walls should be protected with spikes or with stout, smooth sheet metal. By exercising a little intelligence and constant care, rodents and vermin can be denied ready access to a bountiful food supply.

All openings to the out of doors should be made ratproof. Similarly, all holes in the floors or walls should be filled in or covered effectively with ratproof material. Pipes and ducts passing through walls and ceilings must be protected with tight fitting metal guards or the holes surrounding them must be filled in and made ratproof and verminproof. By ratproofing, by eliminating all harborages for rodents and vermin, by protecting all foods effectively and by practicing perfect sanitation the battle against all pests can be successful to an astonishing degree.

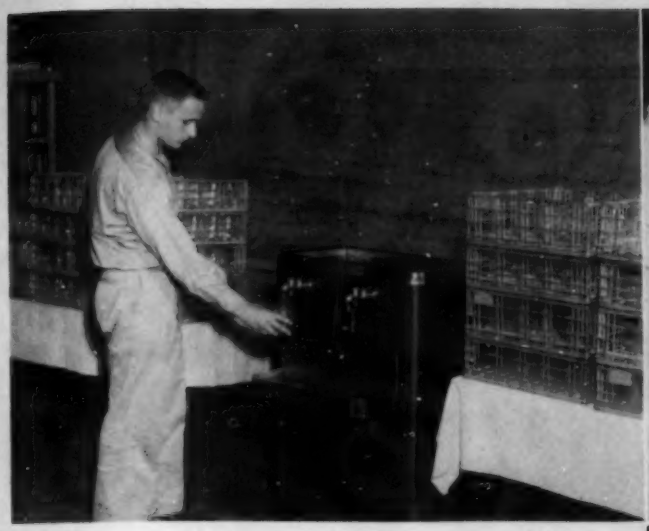
However, in addition to these measures it may be necessary to use poisons in order to achieve complete safety. All doors and windows should be thoroughly screened with 18 mesh screening during the fly breeding season. In addition, the screens should be painted or sprayed with a 10 per cent solution of DDT every six weeks from May 1 to October 1. The walls and pipes in the kitchen, workrooms and other parts of the dining service should be treated in a similar manner if a fly nuisance exists. If this is done, the DDT should be applied after all food has been removed and stored and after all equipment has been thoroughly protected.

Similarly, in combating vermin, a 10 per cent solution of DDT should be sprayed into cracks and crevices if any exist. Sometimes colored sodium fluoride is used for this purpose. When so employed, care must be taken to avoid contaminating the food and eating utensils as well as other equipment. Combating rodents with traps and poisons is a professional job and should be left to a professional exterminator. The successful use of poisons requires prebaiting and the subsequent use of toxic doses of effective poisons which will be sufficient for the purpose of killing rats. There should also be adequate follow-up work to remove and destroy all dead and trapped rodents. The ordinary operator of a dining service is not qualified to do this job effectively.

Desserts being stored for transfer to service counter at Walker-Memorial Dining Service, M.I.T. All racks are clean and covered with clean paper.

The sanitary care of equipment in a food establishment is also of great importance. The nesting of trays should be avoided. To achieve this goal, metal tray racks that allow for drainage should be provided. Similarly, dishes should not be nested unless they are thoroughly clean, inside and out, and are thoroughly dry.

Metal pie racks should be kept clean and the angle irons on which they rest should be free of all accumulations of food. The racks themselves should



be covered with clean paper constantly to facilitate cleanliness. Bread cabinets should be clean and well ventilated and should be free of crumbs. The shelves should likewise be lined with clean paper. Cake cabinets should be treated similarly.

Brooms and mops should be stored off the floor.

Finally, deep fat fryers should be protected against spillage by means of suitable metal guards and the floor and hood should be kept free of all accumulations of grease.

It must be evident that the problem of food sanitation is complex and difficult. The solution of this problem requires knowledge of the principles underlying food contamination, food spoilage and food-borne infections. It requires constant care and strict adherence to sanitary procedures. It requires daily intelligent supervision by a responsible person.

TOP: Glass sanitation and refrigerated cream dispenser. RIGHT: Incinerator in use for combustible rubbish at Walker-Memorial Dining Hall.

BELOW: View of the sanitary kitchen, also at Walker-Memorial at M.I.T.

While educational measures such as classes, lectures, moving pictures, stereopticon slides and posters are helpful in developing trained personnel, nothing can take the place of careful, detailed instruction by demonstration while the man is on the job. Furthermore, no teacher can be more effective than the boss who takes the time and makes the effort to show the worker how the job should be done. When the operating personnel has been trained in this way to function as an intelligent, efficient team, highly satisfactory conditions will prevail. Then food sanitation will have been achieved, food infections will be under control, and the establishment will be highly regarded throughout the college or university community.

Linens THEIR PURCHASE AND HANDLING

ELIZABETH GIBBS
Manager, Residence Halls
Teachers College, Columbia University

IN OUR RESIDENCE HALL FOR 400 graduate women students of Teachers College, Columbia University, we provide all bed linens, bedding and towels.

This is not yet common practice in college residence halls but there is a growing tendency toward providing full equipment in student study bedrooms. Admittedly, it is costly to provide and maintain linens and bedding, especially in these days of increasing costs for supplies, for laundry and for maid service, but there are a number of reasons why we feel it is important:

1. Graduate students do not remain in residence for a four year period but sometimes remain for only a semester. They seldom remain for more than two years.

2. They do not always have a home on which they can draw for linens and bedding and they do not want the expense of purchasing such articles or the bother of having them on their hands afterward.

3. Laundry is a problem. Graduate students, generally, do not send laundry home as undergraduates do. Facilities, provided in the hall for laundering personal articles, would not be adequate for laundering sheets and towels. Should residents patronize commercial laundries, the dormitory would have the nuisance of checking the laundry bundles in and out.

4. Superseding all other reasons is the fact that only by providing our own linens and service can we maintain suitable standards of housekeeping in a household supposed to provide educational experience for residents.

ITEMS PROVIDED

The college provides for each bed: one pad, two sheets, one pillow slip, two or more single blankets and a spread. Beds are changed and made up by the maids once each week.

Bed pads are changed as needed. Blankets, except for accident, are expected to last through the season. Maids bring soiled bedspreads to the house manager who gives out clean ones in exchange and makes a record of the date and room number. Bath and face towels are provided and changed twice each week (three times before the war).

Since each maid is responsible for about 30 rooms, she changes six beds each day. This not only distributes the work but keeps an even flow of linens to and from the laundry and reduces the amount of linens that have to be kept in active service. An institution located where laundry collections and deliveries are made only once a week would probably want to change this schedule and have beds all changed on one day, necessitating a much larger supply of linens in active use.

MAID'S ROUTINE, LINEN CHECK

A Whittier Hall maid reports to her floor at 8 o'clock. Posted in her linen closet are her work schedule, her manual of instructions and an inventory of the linens, blankets, spreads, curtains and draperies for which she is responsible. She straightway loads her truck with the linens she needs for that day's work. Then she goes into each student's room, empties the wastebasket, collects soiled towels and distributes clean towels if it is towel day, strips the bed in the room to be changed that day, turns the mattress, opens the window and leaves in the room the two clean sheets and clean pillow slip she will need to make up the bed.

When this morning collection is over, she leaves her bag of waste in the sink closet for the porter to pick up and piles her linens, for lack of a better place, in the corridor near the freight elevator. Our laundry requires that we separate sheets, towels and pillow slips so she makes a pile of each and sets aside for special attention any stained linens.

At 9:30 a.m. the linen maid goes from floor to floor and counts out with each maid the amount of soiled linen* (Form A). To prevent future argument each maid is given a slip verifying the count. Soiled linens are then packed in laundry baskets and taken by the porters to the basement where they are picked up daily by the laundry. Stained linens are taken to the linen room where stains are removed before the laundry pick up.

In the afternoon the linen maid returns to each floor closet the same number of clean items as were checked out to the laundry in the morning. At the end of each day, therefore, the linen count in each maid's closet should correspond with her inventory list. If not, she and the linen maid must account for the discrepancy.

LAUNDRY COUNT

The sum of the soiled linens counted out on the floors plus any accumulation in the linen room becomes the laundry count for the day and is entered in the laundry book (Form B) which goes to the laundry with the soiled linens and is returned the following day with the clean linens.

Clean linens returned from the laundry are taken to the main linen room adjoining the housekeeping office. This is light and dry, not too hot and equipped with open shelves and abundant counter space, all painted white enamel. Here the linen maid counts and checks the incoming linens. Most laundries will help this process by tying sheets and towels and similar items into bundles of 10 or 20 and some will even separate torn articles.

*Although the foregoing method is common practice, there is a duplication of labor that bothers me as it will other administrators. Rather than have two maids take time to count soiled linens I suggest, if it can be arranged, that each maid leave her soiled linens in a bag identified with her floor or section and that all bags be sent to a central depot where the linen maid can make the count alone. Many hotels, because of the high cost of labor, now make no attempt to keep a linen check, figuring that the loss in linens is not so great as the cost of labor required to count them.

LINEN RETURNED TO FLOOR CLOSETS

	Sheets	Slips	Hand Towels	Bath Towels	Bath Mats	Shower Sheets	Curtains	Spr'ds
8 N								
S								
7 N								
7 S								
6 N								
S								
5 N								
S								
4 N								
S								
3 N								
S								
2 N								
S								

SOILED LINEN COLLECTED

8 N
S
7 N
7 S
6 N
S
5 N
S
4 N
S
3 N
S
2 N
S

Laundry count

Total
Returned
Shortage
Overage

ABOVE: Form A used by the floor maids for the morning count of soiled linens. RIGHT: Form B goes to the laundry with soiled linens and is returned the following day with clean linens.

At any rate, the linen maid checks the count of incoming linen against the laundry count of the previous day, sets aside any articles needing mending and any "wash-overs" to be returned to the laundry and notes any shortages or overages. If you have a good cooperative laundry these shortages and overages should average out in a few days. Any discrepancies in count should be checked with the laundry before the weekly bill is approved for payment. We do not quibble over differences of one or two articles but larger differences need to be investigated.

MENDING

We have a seamstress who is kept busy mending and darning, making curtains, draperies and slip covers, rebinding rugs and doing innumerable chores. Nothing is wasted: when sheets become too thin to warrant mending or darning, they become covers for furniture in storerooms, ironing board covers, dropcloths for the painters, dustcloths and cleaning cloths and, finally, waste for the engineers.

Worn bath towels are in great demand for scrubbing cloths and are especially good for wall washing. Spreads are made into draperies. Long curtains are cut down to sash curtains, and draperies are rehemmed and relined. Hand towels that are too thin for use in student rooms are used in the maid's locker room. Service life is prolonged to the maximum.

New York, _____ 194__

From _____ House

	SENT	RECEIVED	RETURNED
SHEETS			
SPREADS			
SLIPS			
FACE TOWELS			
BATH TOWELS			
LAV. TOWELS			
MATS			
SHOWERS			
PADS			
RUGS			
SCARFS			
T. CLOTHS			
TABLE CLOTHS			
TOPS			
NAPKINS			
SIDE TOWELS			
GLASS TOWELS			
DISH TOWELS			
SILVER TOWELS			
WAITERS' APRONS			
CHINK' APRONS			
RAGS			
BAR COATS			
JUMPERS			
PANTS			
CAPS			
DRESSES			
MAIDS' APRONS			
GLOVES			

DISCARDS

Nothing is discarded without the approval of the house manager and all discarded articles are marked with a red line stitched the full length of the article so that employes and supervisors can readily distinguish those linens which may be used for scrubbing or other cleaning.

The house manager keeps a record of all discarded linens (Form C). In this way she can determine the average life of linens under our particular conditions and decide how many linens to purchase each year in order to keep her inventory up to par. Discarded articles are replaced in like quantity by new ones from reserve stock.

MARKING LINENS

In order to determine the life of linens, they must be marked with the date they enter service. For protection against loss from the laundry or from residents, all bedding and towels must be marked with the name of the institution. This can be done by having the name woven into the article itself, by woven-in names on tapes or labels, by chain stitching in colors or by in-

Record of Discarded Linen

Date	Sheets	Pillow Slips	Hand Towels	Bath Towels	White Spreads	Mohair Spreads	Shower Sheets	Bed Pads	Tea Towels	Blankets
3-28-40	1-1933	2-1936	11-1930	2-1936	5					
	8-1936		5-1937	10-1937						
	16-1937		5-1938							
6-28-40			Sent to Sarasota			Hall				24
7-31-40						2				
9-17-40	1-1934	15-1933	32-1936	23-1935	55		6	5	5	2
	10-1935	12-1934	48-1937	20-1936						
	36-1936	13-1935	16-1938	25-1937						
	92-1937	15-1936	15-1939	17-1938						
	1-1939	10-1937		22-1939						
				12-1940						
10-29-40	1-1933	3-1931	20-1935	3-1935	11	1	4	6	5	4
	2-1934	3-1932	27-1936	57-1936						
	2-1935	10-1938	26-1937	60-1937						
	22-1936	19-1934	25-1938	10-1938						
	71-1937	14-1935		2-1939						
○	2-1939	13-1936								
		29-1937								
		12-1939								
Total	255	170	230	253						
Average Age	3 2/5 yrs	5 7/10 yrs	3 2/5 yrs	3 yrs						

Form C: The house manager's record of discarded linens.

delible ink either stamped on or written by hand on a corner of the fabric.

We have for years had our linens marked in colored chain stitch with the name of the dormitory and the year of purchase, *e.g.* "Whittier '41." In order to make our record of discards more nearly accurate, we also mark on the hem in indelible ink the date the article is actually put into service.

INVENTORY

Two or three times a year our house manager takes a physical inventory of all linens and bedding in service and in reserve—in floor closets, on beds, in linen room, mending room and laundry (Form D).

SPECIFICATIONS FOR LINENS

Sheets. Size: (torn size before hemming) 54 by 108 inches for cot (3 ft. wide), 63 by 108 inches for single bed (3 ft. 3 in. wide).

Thread count: 76 warp by 68 weft (O.P.A. Type 140, heavy muslin).

Fibers: 1 to 1½ inches long and tightly twisted.

Selvage: good strong tape.

Weave: no imperfection.

Hem width: preferably same at top and bottom; neatly and securely stitched.

Because competition has been keen in the sheet market, nationally advertised brands have been perfected to a remarkable degree. During the war years we had to take almost anything offered but in normal times it is possible to ask for competitive bids to meet specifications.

Pillow Slips. Size: (torn size before hemming) for pillow 21 by 27 inches, 42 by 36 inches or 42 by 38½ inches; for pillow 22 by 28 inches, 45 by 36 inches or 45 by 38½ inches.

Specifications same as for sheets.

Seams should be made with the warp running long way of the cases because the fabric is stronger that way.

Bath Towels. Terry or Rib. Size: 22 by 42 inches. (Be careful not to have them too short.)

Pile yarns: secured in good firm foundation fabric in well twisted yarns.

Selvages: strong.

Hems: even and securely stitched.

Hand Towels. All cotton or union. Size: 36 by 18 inches. (Variation of a few inches either way does not matter.)

Union towels are 50 per cent linen, are more absorbent, feel better, look better and launder better than all-cotton. They are more expensive and have not been available during the war years.

Borders: Avoid fancy ones with thin stripes that wear out quickly.

Fabric: good, strong, closely woven.

Fibers: good quality cotton.

Selvages: strong.

Edges: straight.

Hems: securely stitched.

Linen Inventory—Whittier Hall

○	Sheets	Pillow Slips	Hand Towels	Bath Towels	Mohair Spreads	Cotton Spreads	Bed Pads	Tea Towels	Blankets	Shower Sheets
In Use:										
8th floor										
7th floor										
6th floor										
In floor closets										
8th floor										
7th floor										
6th floor										
In Laundry										
In Linen Room										
To Be Mended										
In Reserve										
○										
Total										
Discards										
Balance										
On Order										

Date:
Taken by:

Form D: House manager takes linen inventory two or three times yearly.

QUANTITY OF LINENS

This depends on the frequency of changes and the frequency of laundry deliveries. Mrs. Crete M. Dahl in her "Bedding Manual for Professionals" recommends a minimum of three sets: one on the bed, one in the laundry and one on the shelf. Other writers recommend five sets.

There is no advantage in letting a lot of stored linens get yellow on the shelves or in loading the budget with an enormous order one year and then not ordering for two or three years.

Each manager should determine on a par inventory that will provide an adequate supply for smooth circulation in her setup. From the inventories and record of discards she can determine how many of each article must be ordered each year to keep the inventory up to par.

For instance, in Whittier Hall we have 400 beds and we change a fifth of them each day. Here, then, is a summary of our needs:

	Sheets	Pillow Slips	
	800	400	on the beds
1/5	160	80	needed to change
1/5	160	80	in the laundry
1/5	160	80	on the shelves
1/5	160	80	for emergency
	4)1440	3) 720	total requirements
	360	240	annual replacements

Our records show that the life of sheets in our operation is about four years; of pillow slips, three years. Our annual replacement order, therefore, is 30 dozen sheets and 20 dozen pillow slips.

Blankets. Size: 60 by 84 inches for cot, 66 by 84 inches for single bed.

Color: We have found tan a good serviceable color, not too delicate and not as institutional in appearance as is dark gray or khaki.

Quality: all or 80 per cent wool. Closely and evenly woven background fabric with long elastic wool fibers which can be napped without injuring the fabric. (To test, take hold of some of the nap fibers. If they pull right out or rub off they are not desirable.)

Edges: straight.

Ends: blanket stitched. (Satin binding wears out too quickly; sateen shrinks and puckers.)

We figure the life of our blankets to be at least ten years. They are carefully washed and renapped each year. (Manufacturers recommend dry cleaning and housekeepers are about equally divided in their preference for washing and dry cleaning.) When not in use, clean blankets are wrapped in old pillow slips and stored on open shelves in a light, dry storeroom.

Bedspreads. Size: 72 by 108, 116 or 120 inches.

Mohair spreads purchased in 1936-38 have given and are still giving us superior service and great satisfaction. They are light in weight, they shed the dirt, they launder well and they look attractive.

Since then, we have purchased cotton spreads in a variety of colors and patterns. Although we have not used them, candlewick spreads are popular in residence halls. They are comparatively cheap to buy, light in weight, colorful and easy to launder.

BACK TO ANNUAL ORDERS?

WILLIAM L. CHRISTENSEN

Assistant Purchasing Agent, University of Utah

ONE OF THE LOST ARTS OF PURCHASing during recent years has been the matter of placing annual orders for necessary supplies. The essential controlling factor of annual orders or any forward buying is known need, is not always easy to determine even with the help of the using departments.

Today is of necessity a day of hand-to-mouth purchasing. That forces us to consider whether the economy of a few large orders rather than many small ones compensates for the additional records necessary to keep track of the status of annual orders. It makes us wonder if 100 per cent consolidation of needs in one order will pay for the possible obsolescence of an overstocked inventory.

We question where we are going to find the time to work on annual orders since school now runs twelve months instead of the old nine, and our quiet summers are a thing only to be remembered. We doubt if the usual standardization of materials received on annual orders offsets the need for constant testing that their very standardization requires. Most of us are uncertain whether the supposedly better vendor service is not counterbalanced by the supplier's knowledge that he has a comparatively sure thing of it at least for a while.

We suspect that in the period of rising prices such as we have been and are in annual orders are not the solution to the problem of better quality at lower price. Some of us tend to disbelieve great savings are involved in lower freight rates and handling costs on annual orders, but in spite of our skepticism most of us want to work toward annual orders.

At the University of Utah we have in the past and will try in the future to work toward annual orders on such items as janitorial supplies, laboratory glasswork, paper, fuel, food and maintenance supplies.

Those items that are in stores intory, and that inventory is under the control of the purchasing department, are easiest to obtain on annual orders. Many scientific supplies are difficult because we must rely on the using departments to furnish us with figures as to future needs.

Around the middle of May each year we send out to all the scientific and laboratory departments requests for the lists of supplies and equipment that they will need for the coming year, which in our case begins July 1. We ask that this list be returned within two weeks and follow up our request once or twice in that two weeks with a reminder that we hope they will make an effort to help us save some of their money for them.

When all the lists are received, they are consolidated and also broken into separate lists according to the type of item. These lists are typed into separate quotations and sent to the vendors.

The quotations, when received, are compiled on special forms for easy comparison. Sometimes the department head desires to go over the quotations and lists before orders or contracts are awarded.

The orders are awarded after analysis according to quality, service and price. The requisitioning department is notified of the awarding of the order and from then on the annual order follows the usual routine of any order.

From a paper presented at the annual meeting of the Educational Buyers Association, April 30 to May 3, Omaha, Neb.

Photographs by Paul D. Voth

LEFT: Purpleleaf wintercreeper is used on the south facing terrace at Ida Noyes Hall, University of Chicago. The entire terrace covers 9000 square feet containing 36,000 plants which are spaced 6 inches apart.

Ground Cover

AS A LANDSCAPE FEATURE

CARL F. MACK
Horticulturist
University of Chicago

THE EVER INCREASING USE OF PLANTS to cover "problem areas" is sufficient proof of their value as a landscape feature. Individual adaptability and physical character to weave a solid foliage mat or to stud the ground in blanket fashion aptly defines this class of plants as "ground covers" and, as such, they find a wide variety of uses in garden and landscape work.

Regardless of their other qualifications, botanical affiliations, upright or creeping habit, evergreen or deciduous traits, only those ground covers that are reliably hardy or those whose dwarf growth will lend variation and interest are elected to be weavers of living carpets.

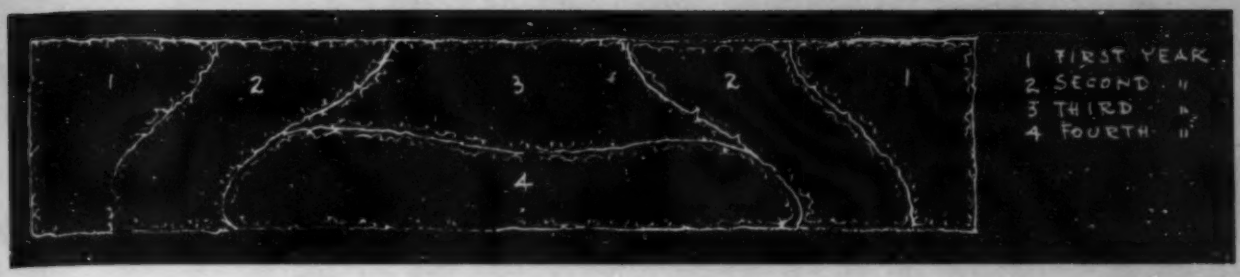
Many spots invite the planting of these mat builders. Panels, from 2 to 20 feet wide that are hemmed in by buildings and parallel walks, are often difficult and awkward to maintain in turf. Court-like, smallish squares surrounded by walks are equally a problem and lack interest. Steep banks of terraces, facing in any direction, also are a burden to conscientious care but furnish a good place for carpeting plants.

The ever present bareness beneath dense foliaged trees, shrubs and evergreens simply cries to be clothed with ground covers. The shade cast by north fronting buildings causes another adverse condition for usual treatment. Still other opportunities offered to ground covers are the flanking of steps, intersections of walks and short entrance walks where, as a rule, plants discourage the practice of cutting corners.

It matters little whether the location is shady or sunny, the soil sweet, acid, damp or dry, the world's vast flora will

The purpleleaf wintercreeper in mid-February. Here it is used on the north side of a campus building.

Japanese spurge (Pachysandra terminalis) furnishes a touch of green through receding February snows.



A four year ground cover planting plan. If propagating facilities are at hand, beds of the first year will become, in due time, the source of material for succeeding plantings, thereby reducing the cost appreciably.

obligingly contribute suitable plants for most environments. (See page 26 for list of plants adapted to various exposures.)

The old-fashioned periwinkle, *Vinca minor,* and its improved variety, Bowles, *Vinca minor bowles,* are still among the favorites and rate with Japanese spurge, *Pachysandra terminalis,* and purpleleaf wintercreeper, *Euonymus fortunei coloratus.* These and sharpleaf wintercreeper, *Euonymus fortunei,* and Baltic ivy, *Hedera helix baltica,* are evergreen sorts, form fairly even mats and are excellently suited for mass planting. Not having their feelings hurt by being stepped on occasionally is another advantage they share in common.

The common wintercreeper, *Euonymus fortunei radicans,* frequently recommended as ground cover, refuses to sprawl comfortably on level ground and is best used on steep banks where upright branches and irregular growth are less objectionable.

For detail work and to cover smaller spaces a few of our native broad-leaved evergreens, Canby pachistima, *Pachistima canbyi,* bearberry, *Arctostaphylos uva-ursi,* wintergreen, *Gaultheria procumbens,* partridgeberry, *Mitchella repens,* and galax, *Galax aphylla,* or two deciduous kinds, the running euonymus, *Euonymus obovatus,* and yellowroot, *Xanthorhiza simplicissima,* may be chosen, provided individual preference for soil acidity and texture is catered to.

Many other plants, particularly Hall's Japanese honeysuckle, *Lonicera japonica halliana,* which retains its foliage until very late, and two semi-evergreen trailing roses, memorial rose, *Rosa wichuraiana,* and Max Graf rose, *Rosa Max Graf,* do a remarkable job in mass plantings on large banks.

Several perennials with persistent green foliage make creditable mats. The carpet bugle, *Ajuga reptans,* not only possesses outstanding qualities for this purpose but is also practically foolproof. Many sorts of sedum, sweetwilliam phlox, *Phlox divaricata,* moneywort, *Lysimachia nummularia,* creeping liriope, *Liriope spicata,* and Allegheny foamflower, *Tiarella cordifolia,* will be found worth a trial.

Then, there is the group comprising coniferous evergreens with Bar Harbor juniper, *Juniperus horizontalis Bar Harbor,* Waukegan juniper, *Juniperus horizontalis douglasi,* and Sargent juniper, *Juniperus chinensis sargenti,* heading the list, and another group consisting of herbaceous perennials.

When bare ground during winter is not objectionable, long-lived herbaceous perennials with ornamental foliage will serve well. Any of the various hostas, or plantain lilies, massed beneath a tree and interplanted with daffodils, which flower in advance of leaf growth of both, will make an effective composition. Other perennials in this class are wild ginger, *Asarum canadense,* the improved strain of lily-of-the-valley, *Convallaria majalis,* and sweet woodruff, *Asperula odorata.*

With the exception of plants that insist on special fare, planting beds for most ground covers should be prepared with good garden soil mixed with peat moss and organic fertilizer. To reduce growth of weeds to a minimum, soil as nearly weed free as possible is strongly advised. A weed infested, newly planted ground cover bed is unsightly and costly and closely planted material requires tedious hand

Common wintercreeper, in winter aspect, on steep west-facing bank where grass is hard to maintain.

Baltic ivy (Hedera helix baltica) has nodding leaves and thereby is less subject to midwinter sunburn.

PLANTS ADAPTED TO VARIOUS EXPOSURES

SUN

Juniperus chinensis sargenti
Juniperus horizontalis Bar Harbor
Rosa Max Graf
Rosa wichuraiana

SUN TO SHADE

Ajuga reptans
Euonymus fortunei
Euonymus fortunei coloratus
Euonymus fortunei radicans

SUN OR PART SHADE

Arctostaphylos uva-ursi
Juniperus horizontalis douglasi
Lonicera japonica halliana
Pachistima canbyi

PART SHADE

Phlox divaricata

PART SHADE OR SHADE

Asarum canadense
Asperula odorata
Euonymus obovatus
Gaultheria procumbens
Galax aphylla
Hedera helix baltica
Hostas in variety
Liriope spicata
Lysimachia nummularia
Mitchella repens
Pachysandra terminalis
Tiarella cordifolia
Vinca minor
Vinca minor, Bowles variety
Xanthorhiza simplicissima

SHADE

Convallaria majalis

weeding which must be repeated frequently to be effective.

Best results are obtained if small plants are used and spaced 6 to 12 inches apart for most popular kinds, and 2 to 3 feet apart for trailing roses. This will assure an even and much neater coverage as small plants mingle more quickly with their neighbors.

When large areas require thousands of plants, the planting may be carried on over a period of years. If the area to be planted is covered with grass, the ground cover beds should be started at each end and followed by additional beds each year. Mass effect can be obtained from the start by adapting what might be termed the pincer method in which the grass area is slowly surrounded and reduced each year. If facilities for propagation are on hand, the beds of the first year will become, in due time, the source of propagating material for succeeding plantings, thereby reducing the cost appreciably.

Only during the first year, that is, the growing months following the spring planting until frost, provisions for reasonable care, watering and weeding must be made. All ground covers that spread by surface runners, wintercreepers, periwinkle and Baltic ivy, develop their carpet so rapidly that second year care will demand little effort: watering during extreme dry spells, removal of paper and refuse and some weeding.

Japanese spurge, Canby pachistima and a few others spread by underground shoots and top growth and are comparatively slower in forming a solid mat. Many perennials multiply by offsets on creeping stems and will cover an area in a surprisingly short time. Well established beds get along on little maintenance and survive normal summers without a single watering or weeding. An occasional trimming along the edges, once or twice a year, improves their appearance and, of course, good housekeeping demands the frequent picking up of papers.

No special winter care is necessary but a snow mulch is highly desirable and beneficial. Most of the broad-leaved evergreen ground covers in exposed places are subject to sunburn which, however, does not injure the plants themselves. When rabbits are prevalent it is important to remember that they consider all wintercreepers choice morsels and can do a great deal of damage in unprotected beds.

The cost of ground cover plantings varies a great deal but expenditures for specific projects are not difficult to estimate. No comparative figure between grass and ground cover can be considered adequate as ground covers are not intended to replace lawns. Only where grass plots and banks demand undue care and remain problem children will ground cover plants pay the original investment by the saving of reduced upkeep.

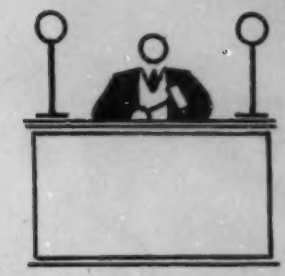
Of greater importance, however, is the value of beauty. Each plant displays its own leaf pattern: deep cushioned rosettes, shingle-leaved carpets or billowy mounds of tiny leaves woven into blankets.

Foliage color also lends much interest; purpleleaf wintercreeper is especially outstanding with its leaf coloration during autumn. Others add flower displays to their accomplishments and a few even "show off" with conspicuously colored berries. Carpets composed of plants with inconspicuous or no flowers may be brought into "bloom" by interplanting with small bulbs, crocus, grape hyacinth, snowdrops and other cheer leaders of spring.

Decorating Student Rooms

Decoration of residence hall interiors often taxes the ingenuity of the cleverest decorators and dormitory directors. In these days of short supply, the job has become even more difficult. Rosalie Godfrey of the University of Texas has done significant research in matters of refinishing furniture and will describe her technics in this field in the June issue.

INTERPRETING BEQUESTS



M. M. CHAMBERS
American Council on Education

DURING THE YEAR JUST PAST AT least six cases reached the higher courts, involving settlement of the estates of deceased persons who had made wills or established trusts for purposes of higher education.

DIVIDED RESPONSIBILITY FATAL?

Peculiar was the case of the Wisconsin testatrix who died in 1926, bequeathing her residuary estate to three women trustees, whose successors were perpetually to be women, with direction to arrange for the establishment at the University of Wisconsin of a chair of American history, to be filled by a woman with the rank and emoluments of full professor and salary not less than $6000.

The University of Chicago was named as an alternative site for the projected professorship and the will stipulated that if the chair was not established within five years, the legacy would lapse. If the chair was set up, the women trustees were to add income to corpus until the annual income of the trust fund reached $6000 and thereafter pay the annual income to the university.

The regents of the University of Wisconsin accepted the proffered arrangement by resolution in 1930 and in 1931 confirmed the acceptance and formally created the chair. In 1937, however, they reconsidered and resolved to reject, though the attorney general advised them that this was not legally possible.

Finally in 1944 the heirs of the testatrix petitioned for a judgment to terminate the trust on the ground that it was impossible or impracticable of execution. Meantime the annual expenses of administration had always exceeded the annual income and the property in the hands of the three women trustees had deteriorated from a value of $50,000 to only about half that sum. Considering these facts, the county court adjudged the trust to have failed and terminated, but the supreme court of Wisconsin reversed that judgment, pointing to the statute which enunciates the well known doctrine of *cy pres:* "Where the fulfillment of the special purpose expressed in a trust or other gift for charitable or other public purposes is or becomes impracticable, impossible or unlawful, it shall be the duty of the courts by a liberal construction of the trust or gift to ascertain the general purpose of the donor and to carry it into effect in the nearest practicable manner to the expressed special purpose. . . ."

Further, the court decided that the regents could not withdraw their acceptance but that they were obligated only to establish the professorship and not to assume the burden of administering the trust property. Ultimate disposition of the case was left to the option of the regents, for the supreme court ordered the county court to offer the regents appointment as successors to the three women trustees, with all their powers and duties, and directed that if the regents accept appointment, the trust will continue; but if the regents decline, then the judgment terminating the trust must be reinstated.[1]

TRUSTEE TO SELECT LOCATION

In 1941 a wealthy Chicagoan died, naming a Chicago bank as trustee of his residual estate of approximately $1,250,000, to establish in his native state of Missouri an educational institution to bear his name and to offer technological training "with a view of better equipping young men and women for performing the world's work." The trustee was expressly empowered to determine the location within the state of Missouri, and the will recited that "Boston Tech of Boston or Rice Institute of Houston would exemplify" the testator's intent.

The trustee bank sought and obtained in 1943 a decree of the Chicago superior court directing it to hold and invest the fund pending further steps and reserving jurisdiction to hear further evidence on the selection of the location. The bank then appointed a committee of three men to receive applications and make recommendations. In March 1944 this committee reported, with two of its members recommending that the school be located at St. Louis University and one recommending that it be at Washington University in St. Louis; and in April the bank reported to the court that it had selected Washington University.

In June the superior court issued a second decree directing the bank to hold the fund in perpetuity for the Sever Institute of Geophysical Technology, to be established as an autonomous school of St. Louis University, thus nullifying the bank's determination. This decree was reversed, however, by the Illinois appellate court, which noted that the will plainly gave the trustee power to choose the location. In such cases a court of equity has jurisdiction to advise or assist the trustee but not to substitute its own judgment for that of the trustee, except where there is proof of malice, fraud or bad faith. Thus the bank's choice of university must stand.[2]

DEVISE WITH RESTRICTIONS

In 1939 a large estate, comprising both real and personal property, was devised in trust to Lehigh University. The will forbade mortgaging any of the property and stipulated that "if the trustees find it necessary to sell any of the real estate or personal property . . . they must first . . . apply to the Orphans' Court of Northampton County, Pennsylvania, for permission to sell . . . and file a bond approved by the court, that the said trustees will invest . . . the whole of the pro-

[1] In re Robinson's Estate, (Wis.), 21 N. W. 2d 391 (1946).

[2] Continental Illinois National Bank and Trust Company of Chicago *v.* Sever (St. Louis University et al., Interveners), (Ill.), 65 N. E. 2d 385 (1946), affirming Same; Murtaugh *v.* Washington University, 324 Ill. App. 613, 59 N. E. 2d 197 (1945).

ceeds of such sale in improvements or buildings on properties which are hereby demised."

By the same will one particular residence property was given to a named individual for life, and then to the Lehigh University trust. The university sold its remainder interest in this property to the holder of the life estate, without seeking permission of the court. The buyer refused to pay $700 of the purchase price on the ground that he was not getting good title because the university had not complied with the terms of the will. His contention was correct. The will, said the court, did not convey the property in fee simple to Lehigh University for its general corporate purposes but created an active special trust which must be operated subject to the conditions of the will.[3]

TESTAMENTARY TRUST FOR STUDENT AID

A Colorado testatrix bequeathed her residuary estate in two equal parts, of which one went to the trustees of the Methodist Episcopal Church, an Ohio corporation, to be placed in a special trust fund for the education of worthy needy young men students of theology or medicine belonging to the Methodist denomination "who need assistance to complete their schooling, the income only to be used for said purpose." The other went to the board of Christian education of the Presbyterian Church for similar purposes.

A relative and heir-at-law of the testatrix attacked the validity of these trusts chiefly on the ground that the designation of individual beneficiaries was too indefinite and uncertain and that the will contained no plan for their selection.

Chief Justice Knous of the Colorado supreme court disposed of these contentions by stating the Colorado rule on the point: "The instrument is sufficient if it 'states the purpose of the charity in general terms and designates the beneficiaries who may partake of the benefits thereof as those of a certain designated class, leaving to the trustees the work of selecting the individuals to receive the benefits.' "

There is also a Colorado statute providing that no devise or bequest for an educational or charitable use "which shall in other respects be valid under the laws of this state, shall be deemed invalid by reason of the indefiniteness or uncertainty of the persons designated as the beneficiaries thereunder."

The contestant also questioned the capacity of the church corporations to receive the property on the ground that they were foreign to the state. The court recalled that in a majority of American jurisdictions the capacity of a legatee cannot be attacked collaterally by heirs-at-law but decided the point in the following words: "A foreign corporation, if it possesses by the law of its creation the requisite power so to do, may act as trustee of a charitable trust where the subject matter thereof is personalty and may take lands as such trustee where not prohibited by the law of the state wherein the land is located."[4]

ADHERING TO DONOR'S INTENT

Hattie C. Wilson of Chicago, who died in 1936, devised real property at 6033 and 6035 South Michigan Avenue to Fisk University, subject only to the stipulation that the university should allow her niece, Sammie Caruthers of Nashville, to pursue studies to "a college degree, or even a master of arts degree" without payment of fees, and provide her with room and board while a student there.

The trustees of Fisk University accepted the devise in writing, and when Sammie was graduated from high school in 1940 they notified her that they were ready and willing to welcome her as a student under the conditions of the will and repeated the notice several times thereafter at intervals. She never entered Fisk University but instead attended the Tennessee Agricultural and Industrial State College "because she wanted to be a stenographer and Fisk did not teach shorthand and typing."

Later she sued, as residuary legatee under the will, for title to the Chicago property, an accounting for rents collected from it by Fisk University in the intervening years, $6000 to cover the cost of her own college education and some $6000 additional, representing settlement of debts and costs of administration of the estate, contending that these should have been paid out of the real property.

Her suit was dimissed for want of equity because the language of the will did not indicate that the testatrix intended that Fisk University should pay for her education at any institution other than Fisk. Fisk University complied fully with the conditions of the will and holds clear title to the Chicago property.[5]

COMPUTING FEDERAL ESTATE TAX

A wealthy resident of Miami Beach created a "living trust" in 1926, specifying that at his death the trustees should hold the assets and apply them to payment of his funeral expenses, debts and inheritance and estate taxes, the residue to be held in trust and the annual income to be paid to his wife during her lifetime. At her death the trust would terminate and the corpus be paid to Loyola University in Chicago. If, during the widow's life, the annual income ever amounted to less than $20,000, then the corpus could be invaded at her request.

At the donor's death in 1937 the wife was 59 years of age, and the actual annual income from the trust property was over $50,000. Therefore it appeared that "the income would never fall below $20,000, in the absence of a cataclysm so unexpected as to be excluded from all reasonable estimates of events to come." Consequently, the value of the deferred gift to Loyola University could be determined by subtracting the actuarially computed value of the widow's life estate and could be deducted as a charitable gift.

In making this computation, however, the collector used an earning factor of 4 per cent compounded annually, as suggested in the Treasury tables. But, in fact, the bulk of the fund was in municipal and government bonds earning only 2.8 per cent and the average annual yield of the entire corpus was only 3.09 per cent.

The U. S. Court of Claims deemed a recomputation on the basis of 3 per cent to be reasonable. This produced a valuation of the deferred gift at the time of the donor's decease at $958,991 as against a valuation of $806,838 produced by the collector's computation; accordingly a judgment for some $36,000 as overpayment of estate tax was allowed. The court held that the Treasury regulations do not require the use of the 4 per cent factor, and would not be valid if they did because obviously at variance with fact.[6]

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[3]Lehigh University *v.* Hower, (Pa. Super.), 46 A. 2d 516 (1946).

[4]Galiger *v.* Armstrong, (Colo.), 165 P. 2d 1019 (1946).

[5]Caruthers *v.* Fisk University, (Ill.), 68 N. E. 2d 296 (1946).

[6]Hanley *v.* United States, (U. S. Ct. Claims), 63 F. Supp. 73 (1945), and 63 F. Supp. 95 (1946).

Seven years OF GENERATING ELECTRIC POWER

ALLEN B. LAMBDIN

Business Manager, Connecticut College

ELECTRICITY IS THE LIFE BLOOD OF modern civilization. Any power failure, no matter how short in duration, paralyzes the normal activities of the home or factory, the school or industrial plant. It took a hurricane in 1938, however, to bring this lesson home to Connecticut College, an institution located in a highly industrial area that prior to 1938 never dreamed of a long delayed power failure. How our institution managed to keep its physical plant in operation for more than two weeks following such a disaster is a long story and possibly may be analyzed at some future date. The purpose of this article, however, is to give the readers of COLLEGE AND UNIVERSITY BUSINESS a brief résumé of our experience over the last seven years in power plant operation at college levels.

Any college undertaking to generate its own electricity, for either power or light or both, must at the outset make a careful survey of not only its present but its future needs. Such a survey can be undertaken in the initial stage by any competent power plant engineer. No consulting engineering service is necessary. Briefly, two questions need to be answered.

HURRICANE of September 1938 left the heating plant at Connecticut College in the state of ruin shown here. That meant a new power plant. Erected in 1939, the new central heating plant is used to generate electricity; an analysis of electrical generation is presented.

TWO QUESTIONS TO BE ANSWERED

1. What is your steam load in pounds of steam per hour for heating, hot water, cooking and other services, analyzed on a daily and monthly basis?

2. What is your electrical load, based on daily as well as monthly requirements, in terms of maximum and minimum demands in kw.'s, and consumption in kwh.'s?

Before I attempt to analyze our problem based on the two foregoing factors, let me make a simple overall statement: Any college, large or small, having a group of buildings serviced by a central heating plant can generate its own electricity at a fraction of the cost for purchased power, provided the requirements for steam and electricity are within a working balance.

Statement No. 2 might as well be given now, namely, the amount of savings is in direct proportion to the steam load required for heating the buildings. In other words, the more steam required to heat college buildings, the cheaper the cost of electrical generation, for a turbo or engine generator is nothing more than a reducing valve, electricity being a by-product of the heating operation.

Connecticut College is an institution housing 805 resident students. Our 23 main buildings are serviced by our power plant for both heat and electricity. The area covered by this group of buildings is approximately 75 acres. Like most institutions, we have a number of buildings adjacent to our main campus but serviced by independent units. These buildings we are leaving out of the picture so far as this analysis is concerned.

Now for our analysis of questions 1 and 2.

Answer to Question 1 in 1939.—A complete study of our steam load was made through the use of steam flow meters on a daily basis and tabulated monthly. Our load was found to vary between 3500 pounds an hour in the summmer months and 12,000 pounds an hour during the coldest winter months. On the basis of daily figures, there was likewise a variation in steam loads depending upon outside temperature and use factors.

Answer to Question 2 in 1939.—A recording kw. demand meter was installed, registering the continuous electrical demand for our institution. Covering a twelve month period, we found the maximum demand to be 210 kw., with a minimum of approximately 50 kw. Our kw. consumption per month was taken from kwh.

ANNUAL REPORT to executive committee shows the monthly maximum power demands, monthly consumption and the saving made for year 1945-46.

CONNECTICUT COLLEGE

NEW LONDON CONNECTICUT

OFFICE OF THE BUSINESS MANAGER

ELECTRICAL GENERATION FOR SESSION 1945 - 1946

	DEMAND K.W.	CONSUMPTION K.W.H.	DIESEL GENERATION	TURBINE GENERATION	COST IF PURCHASED
JULY	140	49,510	49,510		$ 876.42
AUGUST	150	37,710	37,710		688.30
SEPTEMBER	225	55,080	55,080		1,046.22
OCTOBER	280	91,070	64,390	26,680	1,569.66
NOVEMBER	300	98,040	55,040	43,000	1,586.79
DECEMBER	300	64,460	12,330	52,130	1,221.83
JANUARY	310	103,400	29,380	74,020	1,836.16
FEBRUARY	295	87,060	17,390	69,670	1,870.32
MARCH	300	92,340	38,580	53,760	1,602.85
APRIL	310	92,830	56,890	35,940	1,618.22
MAY	300	96,150	83,160	12,990	1,471.67
JUNE	210	51,790	50,950	840	978.74
TOTAL		919,440	550,410	369,030	$16,367.18

ANALYSIS:

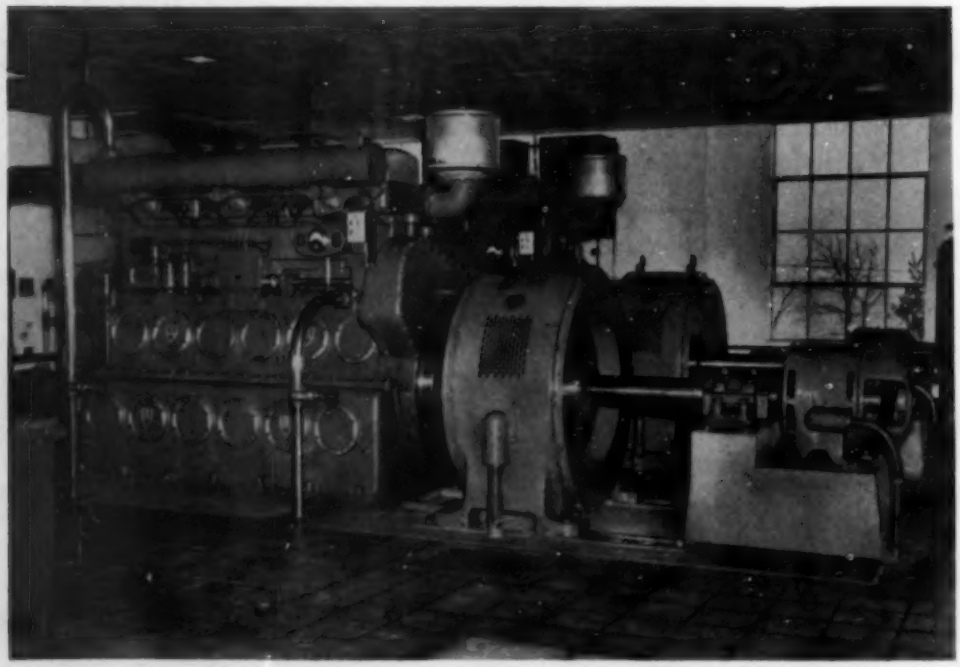
Total Cost If Purchased		$16,367.18
Actual Cost		8,440.65
Fuel Oil Diesel	$2,577.96	
Lubricating Oil	376.28	
Fuel For Turbine @ .003 K.W.H.	1,107.09	
Labor (Extra Fireman)	1,545.00	
Repairs-Depreciation @ .003	2,758.32	
Insurance	76.00	
	$8,440.65	
ANNUAL SAVINGS		$ 7,926.53

meters and ranged from 18,000 kwh. to 68,000 kwh., with annual total consumption of 595,000 kwh.

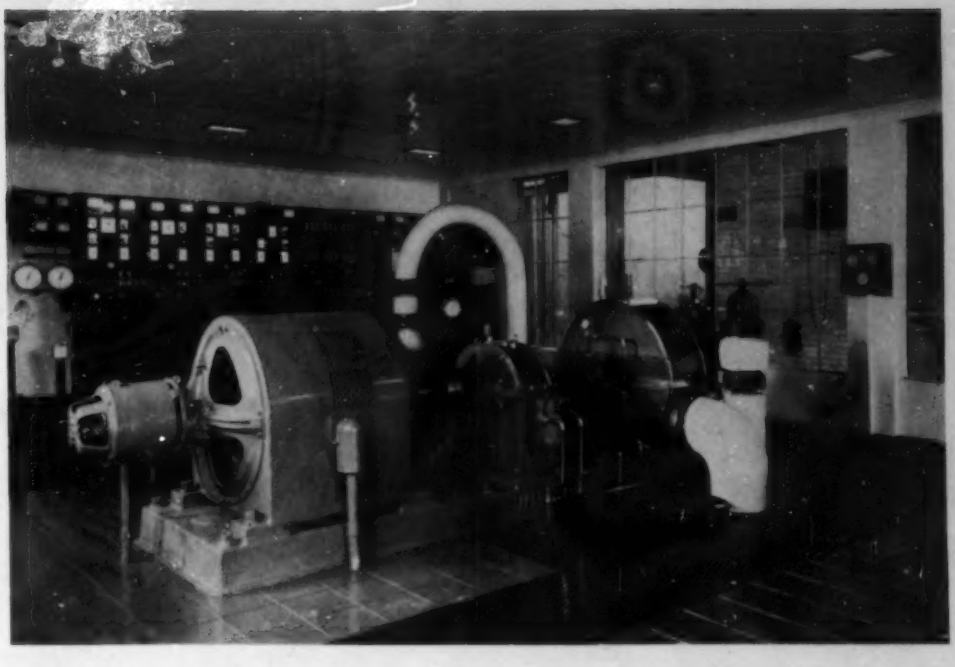
After obtaining these data, we plotted our electrical loads against the available amount of electricity that could be produced by our steam load, finding that the figures ranged from 40 to 50 per cent, the balance to be taken up by diesel generation. Obviously, the peak loads during the winter months as well as the partial loads in the fall and spring, plus total generation during the summer months, required diesel generation. Day to day operation, of course, involves loading the turbines as heavily as steam demand will permit, using one of the diesels to fill in the peaks when coincidental steam demand is low.

EQUIPMENT AND COST

Prior to September 18, 1938, Connecticut College was dependent upon a public utility for all electrical service with an average of about six outages annually, ranging from ten minutes to four hours. Our present generating equipment was installed and ready for operation by March 1, 1939. Since that date, we have ex-



TWO DIESEL engines are six cylinder, 225 b.h.p., with direct connected 150 kw., 514 r.p.m., 4160/2400 volt, four wire, Y connected generators and exciters. These engines carry the load when steam generation is inadequate and during the summer.



250 KW. TURBINE takes the main load as the steam demand permits. A smaller unit (60 kw. turbine) in the rear between the large turbine and the switchboard serves as a standby.

perienced only three outages, none lasting more than four minutes. Exclusive of these three periods our equipment, under the efficient operation of our skilled engineer, G. K. VanderVeer, has given us uninterrupted service for approximately eight years.

The capacity of our generating equipment is 610 kw., distributed as follows: one 60 kw. turbine, one 250 kw. turbine, and two 225 b.h.p. six cylinder diesel engines with direct connected 150 kw., 514 r.p.m., 4160/2400 volt, four wire, "Y" connected generators and exciters.

Since the major portion of our electrical power is for lighting purposes, it was necessary that there be a minimum of voltage fluctuation. Consequently, the electronic type of voltage regulators was used on each generator and hydraulic relay powered governors were used on all power units. In this way, frequency is maintained to within 0.2 cycle and synchronous time is maintained within two seconds over twenty-four hours. Switchboard equipment consists of four generator panels, four high tension distributing panels and one station power panel.

While primarily installed at the outset to provide uninterrupted service 365 days in the year, this diesel-steam combination affords us an ideal heat and power balance. Annual savings are effected by utilizing steam pressure heretofore wasted. Steam pressure at 200 pounds is reduced to 25 pounds in passing through our turbines and then exhausted into the mains for heating our various buildings. There are periods, of course, when the need for steam and the need for power do not balance, thus requiring the diesels for auxiliary power. During the summer months power is furnished exclusively by the diesel generating units. An indication of the low cost of diesel operation is the fact that we have maintained an average consumption of one gallon of oil for each 10 kwh. of electricity that is generated.

When this plant was installed in 1939 at a cost of $58,334, it was designed to take care of the existing load plus three new buildings that were under construction and all future construction that could be anticipated during the following ten years. Since then we have added six buildings and seven faculty houses and still have reserve capacity for a reasonable amount of additional development.

AMORTIZED IN TWELVE YEARS

It can be seen that while we operated at a low load factor during the first few years and have made liberal allowances for repairs, this plant will pay for the initial investment in less than twelve years. Thus we feel that we have solved our heat and power problems, with economy of operation as a major factor.

The accompanying charts, diagrams and schedules will give the reader a comprehensive view of the simplicity of our layout as well as the completeness of our operation. The general analysis of our electrical generation covering seven consecutive years (July 1, 1939, to June 30, 1946) will give the reader an overall picture of our experience. This schedule of annual savings may not appear impressive in these days of six, eight and ten column figures but we find that our faculty responds to any reduction in operating costs that can be reflected in higher salaries, large or small.

GENERAL ANALYSIS OF ELECTRICAL GENERATION, 1939-1946

Session	KW. Demand (Maximum)	Consumption KWH.	Cost If Purchased	Actual Cost	Annual Savings
1939-40.....	245	595,559	$11,242	$ 5,996	$ 5,246
1940-41.....	275	660,480	12,428	6,351	6,077
1941-42.....	260	682,230	12,930	6,836	6,094
1942-43.....	250	644,074	12,310	7,298	5,012
1943-44.....	235	694,364	13,375	7,542	5,833
1944-45.....	270	800,455	14,037	7,547	6,490
1945-46.....	310	919,440	16,367	8,441	7,926
TOTAL.....		4,996,602	$92,689	$50,011	$42,678

College and University Business

CONTINUING STUDY OF OPERATING PRACTICE

Periodically, College and University Business asks a selected group of readers about a specific operating technic or method and publishes the findings for the guidance of readers in measuring their own methods.

WHAT ABOUT HEATING AND VENTILATING?

Interpreted by
W. L. KROGMAN
Acting Superintendent of Buildings and Grounds
University of Chicago

A SURVEY OF 43 COLLEGES AND UNIversities conducted by this magazine in regard to their heating operations and costs reveals a wide range of experience which in some cases has been difficult to interpret or to correlate. Institutions from both the Atlantic and Pacific coasts are included in the study, as well as those in the North and South. Twenty-four states are represented in the survey.

It is conclusively demonstrated that the majority of them have found a central heating system to be more satisfactory for their needs, even though buildings may be widely scattered over the campus. Only 7 per cent of the institutions surveyed reveal that they use individual heating systems exclusively, although about a third of them report that they do have individual heating systems in addition to the main central plant. In general, institutions seem to be satisfied with their present system of heating, only 15 per cent reporting that the present system is unsatisfactory.

Of those that use a central heating system, 81 per cent also provide steam for laundry and other purposes. In addition, 21 per cent generate all the electricity they need through the boiler plant.

The majority of those utilizing a central system of heating indicate that they generate steam in excess of 100 pounds' pressure but distribute it at low pressure to the various buildings. The number of institutions using specific pounds of steam pressure at generating point and the pressure at which it is distributed to individual buildings are indicated in the accompanying statistical table.

QUESTIONS ASKED, ANSWERS RECEIVED

1. What method of heating do you use for your campus?

Central system	62%
Individual units	7
Both	30

Do you believe this to be the most satisfactory for your needs?

Central system most satisfactory	74%
Individual system most satisfactory	100
Systems considered unsatisfactory	15

2. If central heating system is employed, what functions are performed by your boiler plant?

Provides heat for buildings	100%
Provides steam for laundry, etc.	81
Generates all electricity	21

3. At what pressure is steam generated at the central plant?

Lbs. Press.	No. of Coll.	Lbs. Press.	No. of Coll.	Lbs. Press.	No. of Coll.	Lbs. Press.	No. of Coll.
250	2	130	1	90	1	15	1
175	1	120	2	75	2	10	2
160	1	115	3	60	1	8	1
155	1	110	1	50	1	5	1
150	4	100	7	30	1	3	1
						2	1

At what pressure is it distributed to the individual buildings?

Lbs. Press.	No. of Coll.	Lbs. Press.	No. of Coll.	Lbs. Press.	No. of Coll.	Lbs. Press.	No. of Coll.
125	1	40	3	10	3	3.5	1
100	2	32	1	9	1	3.0	1
70	1	30	1	8	2	2.5	1
65	1	25	1	7	1	2.0	1
60	1	20	3	6	2		
50	1	15	2	5	1		

4. If individual unit system of heating is used, what types are employed?

Steam boiler	60%
Hot water	39
Warm air	39

5. What medium is used for distribution of heat?

212° or high temperature steam	70%
Subatmospheric steam (variable pressure)	21
Hot water	16
Warm air	30

6. How do you rate the importance of the following factors in reducing heating costs?

	Absolutely Nec.	Very Imp.	Desirable	Ques.	Not Worth Exp.
Combustion control	21%	48%	19%	—	—
Temperature control	19	29	14	—	—
Master control	16	28	14	9%	—
Zone control	11	19	30	2	2%
Room control	12	21	11	11	9
Roof and wall insulation	2	41	28	7	5
Weatherstripping	14	41	29	7	2
Calking	14	40	33	2	—
Storm windows	4	9	47	11	7
Pipe insulation	40	38	11	—	5

7. What type of mechanical ventilation, if any, is used in the following types of buildings?

	In Existing Buildings			Future Buildings		
	No Mech. Vent.	Central Fan	Unit Vent.	No Mech. Vent.	Central Fan	Unit Vent.
Classrooms	50%	41%	18%	10%	15%	15%
Auditorium	33	41	13	—	31	8
Gymnasium	41	28	12	7	20	—
Laboratories	28	38	38	2	10	15
Dining Halls	48	31	23	10	12	5
Student Union	31	20	10	8	10	10
Library	31	43	15	5	20	5

8. Do you have any buildings air conditioned?

Yes.....10% No.....90% *Buildings:* Student Union, Administration, Theater.

9. If so, what type of air conditioning is employed?

Central cooling..... 100%

10. In construction of future buildings, is provision being made for air conditioning?

Yes.....21% No.....79%

11. What types of air conditioning systems are planned for new buildings?

Central cooling.....50% Individual cooling units.....50%

Those utilizing individual heating systems employ a steam boiler in 60 per cent of the cases, with use of hot water and warm air being about equal in popularity, although not as frequently employed.

In the matter of reducing heating costs, combustion control is held to be most desirable and effective, with roof and wall insulation, weather stripping and calking being considered the next most desirable technics for lowered heating costs. Pipe insulation and storm window installations also rate high as factors in controlling heating costs. About a third of those reporting feel that room temperature control is extremely valuable.

Though the survey reveals that most colleges or universities know how many cubic feet of building space is being heated, considerable lack of information is reported as to what constitutes their units of pounds of steam generated. Several of the institutions are also unable to report what their steam use for building heating is in pounds of steam per thousand cubic feet of building volume per degree day. Unless they have this information readily accessible, this reviewer finds it difficult to believe that they ascertain heating costs or can control them effectively.

A high percentage of institutions report they have no mechanical ventilation installations in present buildings. Those having mechanical ventilation installations indicate that a central fan system is most generally used; laboratories appear to be the buildings most often having unit ventilators in addition to a central fan system. In new buildings, unit ventilators are found more popular for classrooms and laboratories; a central fan system is considered preferable for auditoriums.

In regard to air conditioning, only 10 per cent of the institutions report such installations, with the college union, administration and theater buildings being the structures so equipped to date.

Those reporting on plans for the future indicate that libraries, science, music, dormitory, theater and dining hall buildings will be air conditioned. Such installations will be provided in 20 per cent of the institutions reporting future building plans. In new buildings, central cooling and individual units rank equally as methods of air conditioning, whereas in present buildings all those reporting the presence of air conditioning indicate that they used a central cooling system.

Manufacturers' Catalogs . . .

. . . are often misplaced or lost, with the result that the purchasing function in a college or university is unduly delayed. Henry B. Abbett of Purdue University will tell in the June issue how a complete catalog file is maintained and utilized at that institution of higher education.

QUESTIONS AND ANSWERS

Dormitory Floor Covering

Question: Can someone advise about the possibilities of using heavy linoleum on concrete as a floor covering in a women's dormitory? What is the experience on maintenance, length of wear and similar properties, as compared to those of wood, asphalt tile and other commonly used materials?—W.N.J., Va.

ANSWER: For a reply to this question I have consulted Lee Burns, director of residence halls. He places his preference of types of floor covering for dormitories as follows: (1) rubber tile, (2) asphalt tile, (3) linoleum, (4) wood.

He would place terrazzo also rather high on the list, probably before linoleum. Terrazzo definitely requires throw rugs because of its coldness but is probably the most durable type of floor. Some rugs are desirable on all types of floors.—A. F. GALLISTEL, *superintendent of buildings and grounds, University of Wisconsin.*

Pay Roll Headache!

Question: How can one keep track of pay roll changes? When a person leaves the institution how can pay roll clerks be advised?—F.S.M., Tex.

ANSWER: Although the first of these two questions may have been intended to query possible mechanical systems for recording pay roll changes, I shall assume that their proponent has but a single thought in mind; that the second question merely is a clarification of the first.

This appears to be a problem plaguing many educational institutions. On account of their scattered and decentralized operations, it is not uncommon to find that pay roll checks have been drawn for persons who have left the employment of the institution. In departments where the supervisor carries out his responsibility of notifying the pay roll officer promptly of changes in his staff no such problem exists. When there is laxity in this regard, the first notice a pay roll officer receives that an employe no longer is at the institution is when the departmental supervisor or the former employe himself, depending on the method of distributing checks, returns for adjustment or cancellation a check covering payment beyond termination date.

There is only one sure fire solution to this problem, namely to pay everyone on the basis of a time clock record. Inasmuch as the universal adoption of time clocks is not feasible, pay roll officers will have to continue living with this headache!—W. EMERSON GENTZLER, *bursar, Columbia University.*

Should Arboretum Be Formal?

Question: We are thinking of setting up an arboretum adjacent to our campus. Should this be formalized or permitted to develop in its natural state?—R.S., Miss.

ANSWER: Whether an arboretum should be formalized or permitted to develop in its natural state depends upon the purposes for which it is established. It is our feeling at Wisconsin that our arboretum should be kept as nearly natural as possible because it has been established for the following purposes:

1. To restore at a point near the university types of primitive Wisconsin landscape and their flora and fauna.

2. To provide for the study of plants and animals as individuals and as groups; their ecological relationships as well as their systematic classification, and, incidentally, economic and landscape possibilities.

3. To enable folk to come into intimate contact with the out-of-doors, this being the only recreational use to be served by the arboretum. The use of the area as a picnic ground and for organized play would defeat the primary purpose of the arboretum and should be discouraged; an adjoining city park can furnish facilities for these activities.—A. F. G.

Work Program for Students

Question: How best is a work program for students administered for educational as well as business goals?—H.L.H., Neb.

ANSWER: Many colleges today recognize the desirability of a plan for actual cooperative working arrangements similar to that of Antioch College. Others have more or less coordination between the student placement office and the work done by the students during the summer. Wellesley College, for example, asks for reports from its students who work in the summer and also outlines required reading.

Since in normal times the undergraduate will have at least three summer vacations during which he can accumulate working experience, this experience may well have a favorable effect on the academic work of a student. This is particularly true when applied to case work studies where a more realistic view can thus be obtained. It is generally conceded that most people learn more readily by doing than by listening. To bear this out, I quote Dean Donald K. David of the Harvard Business School:

"Administration involves the making of decisions and the transforming of these decisions into action by the human organization. Men cannot be trained to do these things by accumulating and memorizing facts; there is little thought and no action in such training. Our experience with the military programs has shown that men can best learn to do by doing."

For specific information, I suggest that the questioner write to Antioch College, Yellow Springs, Ohio; Professor Winthrop E. Nightingale, director of cooperative work at Northeastern University, Boston, or to other institutions known to carry out similar programs.—GLADYS H. MCCAFFERTY, *director of personnel relations, Harvard University.*

Handling Time Taking Problems

Question: In a small college how can small time taking problems be kept out of the business office?—W.E.B., N. C.

ANSWER: Numerous auxiliary functions requiring time and attention by the chief financial officer and his associates center in the business office and are accepted as a general community service. Such services may be transferred from the business office to some other administrative unit or, if they are of such a character as not to warrant institutional support, they may be eliminated by executive announcement.—RALPH J. WATTS, *business manager, Lawrence College.*

NEWS

Colleges Will Spend 5½ Billions on Buildings . . . G.I. Drop-Out's Are Analyzed . . . Report on Veterans' Absences Simplified . . . Congress May Study College Tax Exemptions . . . May Vote but Not Appropriate Funds for Temporary Housing

Committees Recommend $35,500,000 for F.P.H.A. Temporary Housing

Both the Senate and House committees on banking and currency have approved an authorization of an additional $35,500,000 to F.P.H.A. for temporary housing of veterans. The original request was for $50,000,000.

The federal government has appropriated under Title V of the Lanham Act a total of $438,462,814 for reuse veterans' housing. For this amount, F.P.H.A. originally planned to make available 200,000 units of temporary housing. Owing to rising costs, this program was cut back to 164,000 units, of which 126,000 were completed as of April 1, 1947. Of the remainder, approximately 25,000 are nearing completion and funds are still available to complete them.

The $50,000,000 requested by F.P.H.A. was to complete the 13,000 units for which no funds were available. Testimony presented by that agency showed that there were 3730 units on which no actual construction had been done and that the cost of such construction would be approximately $4000 a unit as compared with $2770 a unit for those already completed. However, colleges and cities had invested approximately $500,000 in site preparation for the units on which construction had not been started.

In the light of this testimony, the committee reduced the total by $15,000,000 and directed F.P.H.A. to cancel contracts on the 3730 units on which no construction had been begun as of April 1, 1947, but authorized a refund of the $500,000 already spent by colleges and municipalities on site preparation for such units.

The committees also authorized $22,631,501 to complete the 8300 units on which construction had been started and a total of $8,500,000 for reimbursement "to local bodies and educational institutions for expending their own funds in completing units which otherwise would have been suspended because of lack of funds and for reimbursable utility work performed."

There is little doubt that Congress will pass the authorization bills. In the light of recent economy actions of the appropriations committees, however, there may be more serious difficulties when the actual appropriation comes to them for approval.

Congress May Study College Tax Exemptions

Revenue experts in Congress are becoming increasingly concerned over the growing tendency of schools and colleges to buy and either operate or lease money-making business properties and enterprises, thus removing them from the revenue producing category.

This enterprise is entirely legal and has been in operation by a number of institutions for years. During the past few months, several universities have purchased commercial property or enterprises valued at a million or more dollars. Since nonprofit educational institutions pay no federal income tax and need not file returns showing the source of their income, the joint committee on internal revenue taxation is evaluating whether or not such policies are justified. Similar immunity is enjoyed by labor unions, religious and charitable associations and similar "nonprofit" organizations.

The joint committee also plans to examine the policy of research divisions of colleges and universities which sell their services to private industrial concerns.

$5,500,000,000 for New College Building, Survey Estimates

A $5,500,000,000 college and university construction program has been reported by the U. S. Office of Education with at least 20 per cent of the building expected to be under way by next January.

The preliminary report, based on a survey three fourths tabulated, shows that 912 major institutions out of 1700 over the country are drafting plans to enlarge their present capital investment of $3,000,000 by at least 93 per cent.

Directed by Dr. Ernest V. Hollis of the United States Office of Education, the survey will not be completed until May 15, but estimates already available cover at least 75 per cent of postwar building plans.

The survey includes universities, colleges and junior colleges. For use in the 93 per cent plant enlargement, colleges and universities have in their treasuries $1,750,000,000. They estimate additional needs at about $3,750,000,000, according to Dr. Hollis.

At least 90 per cent of the construction will be for permanent buildings, with 10 per cent of a temporary nature. Permanent construction will fall into the following categories:

1. Laboratory and shop buildings.
2. College unions and recreational centers.
3. Classrooms.
4. Library buildings.
5. Service and maintenance buildings.

Laboratory and shop buildings will be of structural steel and brick with slate or similar types of roofing. Students' unions will be of the same materials.

Present plans for the long-range program call for the following: ex-

pansion of classrooms by 58 per cent; increased laboratory facilities by 76 per cent; instructional shops, 75 per cent; administration buildings, 46 per cent; libraries, 80 per cent; cafeterias, 41 per cent; gymnasiums, 83 per cent; auditoriums, 88 per cent; student centers, 155 per cent; infirmaries and hospitals, 90 per cent, and service and maintenance buildings, 55 per cent.

All other nonresidential housing on campus sites would be increased 23 per cent above present investments. This includes such buildings as chapels and little theaters.

The 912 institutions reported that they now have 275,000,000 square feet of building space and they desire private industry to build them 250,000,000 more square feet.

V.A. Analyzes Causes Behind G.I. Drop-Outs

Only 1.5 per cent of the veterans who had discontinued training and education of all types under Public Law 346 dropped out because of "unsatisfactory progress," according to figures based on a V.A. sampling study of the 759,000 veterans who were classified on January 31, 1947, as in "terminated status." The proportion who dropped out of college because of "unsatisfactory progress" was only 0.9 per cent.

Other reasons for terminating training include: end of term or completion of course, 30.4 per cent (9.1 per cent of those in on-the-job training, 34.9 per cent in college, and 33.8 per cent in other schools); domestic and financial reasons, 8.1 per cent, and transfer to Public Law 16, 5.2 per cent (7.3 per cent among college veteran students).

The total number of veterans who have discontinued their training and education during the more than two years of G.I. education is 232,254 from on-the-job training, 291,200 from colleges and universities and 235,546 from other schools. Since approximately 45 per cent of all veterans under Public Law 346 are in institutions of higher education, the percentage of termination of course is less in colleges than from either on-the-job training or from other schools. The drop out rate for veterans is less than one half that of nonveterans.

New Regulations Issued Concerning Veterans' Absences

A V.A. regulation approved on April 21 simplifies attendance reports required for veterans enrolled in colleges and universities.

Under Public Laws 16 and 346, the veteran student is entitled to accumulated leave up to thirty days a year and may continue to receive subsistence payments after the termination of his time-entitlement for such balance of time as he has not been absent from classes during the year.

The only reports now required are:

1. An immediate report when the enrollee has been absent for a total of five days within a term (semester or quarter) and/or when credit for the course or for a unit subject in the course is endangered or lost because of absences, as for example, when the veteran has "overcut."

2. A report at the end of each term (semester or quarter) showing the number of absences for each enrollee.

This limitation in the type and frequency of reports applies only to "collegiate institutions which are members of recognized national or regional educational accrediting associations and those which, although not members of such accrediting associations, grant units or credit acceptable at full value and without examination by collegiate institutions which are members of national or regional educational accrediting associations."

The institution is required to report only the number of absences of each veteran student from each class, and an indication of whether or not he is making "satisfactory progress." The Veterans Administration calculates the number of days of absence to be deducted from the veterans' accumulated leave by using the following formula: Multiplying the total number of class absences by the fraction "5 over the number of term hours carried."

Phillips Exeter Has Drive

Phillips Exeter Academy has launched a campaign to obtain $5,000,000, the first time in its 166 years that the school has appealed for the public support. This is now necessary if the academy is to increase salaries of teachers, add more scholarships and keep the tuition fees from rising.

Negro College Drive Backed by Truman

On the eve of launching the fourth annual drive of the United Negro College Fund, Inc., officials of the fund received a letter from President Truman supporting the drive. In his letter, President Truman stated that "where Negro veterans are concerned, the greatest burden and the greatest opportunity have fallen to the Negro college."

In praising the work being done, Mr. Truman's letter continued:

"We have a great obligation to the hundreds of thousands of Negro veterans who served in the war in all capacities and in all services; . . . it is right that we should discharge a part of this obligation by extending and improving the facilities for higher education among Negroes."

John D. Rockefeller Jr., chairman of the national campaign advisory committee, is aiding the fund "with time, thought and money," since he considers the drive for Negro education "the sanest, soundest and most noncontroversial approach to the solution of the problem involving America's Negro population." Frank M. Totton, vice president of Chase National Bank, is national chairman of the fund and Dr. F. D. Patterson of Tuskegee Institute is president.

Grant for Temporary Facilities Denied

In spite of concerted efforts to gain favorable action, the appropriations committees of both House and Senate have disapproved the request of the Federal Works Agency for $20,000,000 for additional temporary educational facilities.

In justification of its denial of the request, the House committee cited the fact that the cost of temporary facilities was so nearly the same as for permanent construction that further expenditure for temporary buildings is unwise. It also pointed out that expenditures by F.W.A. for this program were only a small proportion of the $75,000,000 originally appropriated. F.W.A. stated that while the actual amount paid out was only a little more than $4,000,000 on completed projects, more than $70,000,000 had already been contracted for through allocations made to schools.

S. 1131 Proposes College Scholarships

Senators Pepper and Murray, on April 18, introduced S. 1131 to provide loans and scholarships to enable students to obtain education in the 11th years of school grade and above.

The funds would be appropriated to the states on the basis of population aged 14 to 26 inclusive combined with the need for assistance in the state on a prescribed formula. To procure the funds, each state must "establish or designate a single state agency as the sole agency for preparing and carrying out of the state plan." It must also assure the distribution of such funds within states maintaining segregated schools in the proportion which the population of the segregated group bears to the total population 14 to 26 inclusive.

The bill proposes to allow the state agency to determine means of identifying and certifying recipients of such loans or scholarships except that it specifies that such aid shall be given solely on ability and shall be distributed to students on the following basis: at least 20 per cent to students enrolled in the 11th and 12th years; 30 per cent to students enrolling in post high school institutions, grades 13 to 16 inclusive, and at least 20 per cent to students in postgraduate or professional education. The individual receiving such aid would be free to select the institution in which he wishes to enroll, except that it must be nonprofit and meet the standards of the state educational agency.

The amount of the loan or scholarship would not exceed $125 a month for a student without dependents, $150 per month with one dependent and $175 with more than one dependent. Loans would bear 3 per cent interest and would have to be repaid within twenty years after the student completes his education under the provisions of the bill.

The bill was referred to the Senate committee on labor and public welfare.

V.A. Provides for Student Transfer

The Veterans Administration has announced that veterans enrolled under the G.I. bill who plan to continue their education this summer in a different school or college than the one in which they are now enrolled should apply immediately for a supplemental certificate of eligibility.

Copies of the application procured must be sent to the V.A. regional office having jurisdiction over the institution in which the veteran is currently enrolled. This office will then issue the veteran the necessary supplemental certificate.

The application must be filed well in advance of transfer since the veteran must have this certificate before he can be admitted to the new school or college.

Rules on Summer Training

The administrator of the Veterans Administration has ruled that time spent by naval reserve personnel in summer training camps will not be added to the time entitlement for the education and training of the veteran or be counted toward the ninety day minimum active duty required for educational benefits under P. L. 346.

Hearings Are Held on Aiken Bill

The subcommittee on education of the Senate committee on labor and public welfare held hearings on May 5 and 6 on the Aiken bill to provide $250,000,000 for grants-in-aid for construction of permanent educational facilities needed by colleges and universities for veterans.

Representatives of national veterans' groups, of educational organizations and of individual institutions all urged favorable and speedy action by the committee.

Dr. Arthur S. Adams, chairman of the housing advisory committee of the American Council on Education, said, in testifying:

"The peak of veteran enrollment in our colleges and universities will not be reached until 1950-51 and veterans will continue to comprise a considerable proportion of our students for at least ten years.

At present there is a minimum of 2,000,000 veterans eligible for college who have taken out the Certificate of Eligibility and who have not yet enrolled. Other veterans are still indicating their intention of going to college by taking out their certificates at the rate of 200,000 a month."

Stetson Drive Moves Along

Substantial gains have been made by John B. Stetson University in its million dollar improvement campaign, according to President W. S. Allen. To date, approximately $350,000 has been received in cash, and an additional $359,000 has been secured in pledges with continuing progress being noted.

FOOD SERVICE DIRECTORS at special meeting during National Restaurant Association convention hear talks by J. P. Nye, Columbia; H. W. Herman, College and University Business, and G. O. Arbuckle of Purdue.

No Additional Federal Funds for Planning

On April 16, President Truman transmitted to the Congress a request to authorize the Federal Works Agency to spend $1,000,000 of the amount remaining in the initial appropriation of $64,000,000 for loans or advances to nonfederal public agencies, including public educational institutions, to aid them in financing preparation of plans for buildings and public works.

The act providing expenditure for such planning expires on June 30 and there appears little justification for asking that it be extended. Consequently, no new planning projects can be financed by advances through F.W.A. after this date, but if Congress authorizes the request the $1,000,000 will be used to complete the inspection of plans under way by June 30.

Changes in C.P.A. Rules by Housing Expediter

With the transfer of construction controls from the Civilian Production Administrator to the Housing Expediter, a series of revocation notices was issued during April.

Of the more important controls that have been revoked are: Direction 13, PR-1, ratings of iron and steel; Direction 14, PR-1, controls on idle or excess inventories; PR-26, policy on CC ratings; PR 34, R.F.C. sales of certain government-owned materials; Order M-21, specifications for delivery of iron and steel products, and M-293, regulating placement and acceptance of orders and restriction of production and deliveries.

Rhode Island to Have Catholic Girls' College

Ochre Court, 50 room villa owned by Mr. and Mrs. Robert Goelet of New York City, has been given to the Catholic Diocese of Providence, R. I., for use as a college. The college, to be known as Salve Regina College, will be Rhode Island's first Catholic women's college; it will be administered by the Sisters of Mercy.

The estate to be used by the new college covers six acres and was taxed last year by the city of Newport at an assessed valuation of $312,000, of which $225,800 represented the value of the mansion.

President Urges New Department

On April 30, President Truman endorsed the establishment of a federal Department of Health, Education and Welfare. Mrs. Eugene Meyer, who discussed the proposal with the President, said that he expressed hope that the new post will be established as soon as possible but emphasized that the final bill must be workable from the administrative point of view. The Senate committee on expenditures in the federal government has completed hearings on both the Taft and Aiken bills but has not resolved the differences between them or issued a report.

Negroes on Faculties of Northern Colleges

A recent report released by the social science institute at Fisk University reveals that northern colleges are showing a greater tendency to permit Negroes on their faculties.

Before the war, according to the institute survey, there was not a single Negro on faculty of the northern college or university holding his post with permanent tenure. Since the summer of 1945, however, 56 Negro men and women have been hired by 34 colleges for a quarter's teaching or longer, most of them for a full year.

Western Association Hears Talks on V.A., Construction

Sixty-four administrative officers representing 35 institutions of the mountain and coastal areas attended the meeting of the Western Association of College and University Business Officers April 27-29 in San Francisco.

The keynote address was delivered by N. R. Henson, director, training facilities service, Veterans Administration, who outlined recent developments in contractual and business relations between V.A. and colleges and universities. Another informative talk, made by William Norton, business manager, University of California, on dormitories, was thought-provoking in view of the high construction costs now prevailing and the probable difficulty to be encountered in amortizing bond issues required to finance new dormitories.

Officers elected at the meeting are listed in the Directory of Associations on page 40 of this issue.

E.B.A. Delegates See Return of Buyers' Market

Several speakers at the 26th annual convention of the Educational Buyers Association in Omaha, April 30 to May 3, indicated that a gradual trend toward a buyers' market could be noted with the result that once more purchasing agents of institutions will be able to control more directly their purchasing technics and to set enforceable standards.

"Back to Purchasing" was the theme of the convention, emphasizing a return to more normal purchasing methods and reviewing the problems in specific commodity fields. From all over the United States came 253 purchasing agents who are associated with colleges, residential academies and universities to attend the four day meeting.

Keynote address of the convention was delivered by Stuart Heinritz, editor of *Puchasing Magazine*. He suggested that purchasing agents of colleges and universities be slow in accepting contracts with vendors in which an escalator clause is included in the case of goods ordered for future delivery.

John Roche, director of the industrial division of the National Safety Council, urged convention delegates to be active in developing safety programs on their campuses. In obtaining new equipment, he urged purchasing agents to consider safety features as well as its utility and quality.

As other highlights of the convention Dr. Ernest V. Hollis, chief of the veterans' education facilities program, U. S. Office of Education, discussed surplus property acquisitions, and N. R. Henson, director of the training facilities service for vocational rehabilitation and education for the Veterans Administration, outlined latest developments in V.A. contracts.

$2,500,000 Campaign

Williams College has opened a $2,500,000 campaign to increase salaries and to improve building facilities. Of this sum, $1,000,000 is to be allocated to salaries, the remainder to remodeling of the physics, biology and library buildings and construction of a dormitory-club house for nonfraternity men.

Maryland Survey Urges Junior Colleges

The report of a survey made by the American Council on Education of Maryland's higher education needs urges the adoption of a system of junior colleges in Maryland to increase the opportunities for its young people to go to college. The state now stands forty-fifth among the states in the number of its population 18 to 21 years attending institutions of higher education.

The survey staff, of which Dr. John Dale Russell was director, proposed that the junior colleges, established in local communities, be supported jointly by the community and the state as a part of various local school systems.

The report also recommended increased facilities for the state university to a capacity of 10,000; more state scholarships, and increased salaries for teachers in state-controlled institutions.

Hunter Decides to Keep Veteran Students

Hunter College authorities have revised the ruling that veteran students entering last year would be required to transfer to other institutions to complete their education. Some 860 men students at this women's college will be affected by the announcement.

President George N. Shuster, in explaining the extension, declared that the "extreme difficulty" faced by veterans in getting into other institutions has made it advisable for Hunter College to continue to serve them. Hunter will revert to its former status as a women's college after the present emergency.

Educational Facilities Approved

In its final release on April 6, C.P.A. reported that applications for the construction of educational facilities to cost more than $300,000,000 had been approved during the fifty-two weeks ending March 27. This was 10 per cent of all construction approved throughout the year. While C.P.A. denied 41 per cent of all applications for industrial construction, the denials for construction of educational buildings was less than 5 per cent. These were exclusively noninstructional facilities.

Two Lake Forest Schools to Expand

Announcement was made recently by the board chairmen of Lake Forest Academy and Lake Forest College that the academy had purchased the old J. Ogden Armour estate near Chicago and that the college would soon take title to the academy buildings which are just across the street from its present campus.

The purchase price of the Armour estate was set at $400,000, said to be 20 per cent below its ready market value. The academy is purchasing 687 acres but will retain only 187 acres for its present use and future development. The remaining acreage will be sold for residential development.

Cost of converting the farm to academy use is estimated to be at least $400,000 as follows: new dormitories, $240,000; new athletic fields, $20,000; converting existing structures, $130,000, and moving expenses, $10,000. The academy now has $340,000 in gifts and pledges and $122,000 insurance from a fire which destroyed Reid Hall.

The acquisition of the academy campus by Lake Forest College will give the college a 90 acre campus. It will add 27 acres to the college, 11 buildings, tennis courts and athletic fields. Dr. Ernest A. Johnson, president of the college, said the institution's plans call for a new gymnasium, another women's dormitory and a fine arts building, plus additional endowment to cover cost.

Names in the News

Marion E. Witmer, business manager of Taylor University for ten years, accepted an appointment April 1 as assistant purchasing agent of Indiana University. Prior to his association with Taylor University, Mr. Witmer had served fourteen years as an officer of the Dime Trust and Savings Bank of Fort Wayne, Ind. *J. W. Warner,* business manager of the University of Dubuque, has been appointed business manager of Taylor University. His appointment becomes effective July 1.

Colgate W. Darden Jr., former governor of Virginia and chancellor of the College of William and Mary, has been appointed president of the University of Virginia. He succeeds *Dr. John Lloyd Newcomb* who is retiring in June at the age of 65. Mr. Darden becomes the university's third president.

Dean E. S. Wells Kerr of Phillips Exeter Academy has been elected a charter trustee of Princeton University, according to an announcement by Dr. Harold W. Dodds, Princeton president. Dean Kerr will serve as permanent trustee until reaching the retirement age of 70, after having previously served a four year term as alumni trustee at large.

Paul A. Hanna has been recently appointed business manager of the University of Missouri, after having served previously as assistant to Vice President Leslie Cowan. He first joined the University of Missouri administrative staff in July 1946, after serving four years in the army, part of that time being stationed in Japan.

Dr. William S. A. Pott, president of Elmira College, recently announced his resignation, effective June 1948. President of the college for twelve years, he also is president of the New York State Association of Colleges and Universities and president of the state division of Phi Beta Kappa. He told his faculty that he felt the best interests of a small institution were served when there was a limited term of office for the president, and that he did not want to encourage long tenure in the position.

Dr. William H. Adolph has been named acting president of Yenching University in Peiping, China, succeeding *Dr. J. Leighton Stuart* who is now the American ambassador to China.

John L. Knight was formally inaugurated as tenth chancellor of Nebraska Wesleyan University on April 24. He is said to be one of the youngest college presidents in the country and succeeds *Dr. Benjamin F. Schwartz* who will re-enter the ministry.

John J. Donovan of Berkeley, Calif., has returned to the practice of school architecture in partnership with *Ralph N. Kerr.*

DIRECTORY OF ASSOCIATIONS

Associations of College and University Business Officers

Central Association

President: C. D. Simmons, University of Texas; vice president: Herbert Watkins, University of Michigan; secretary-treasurer: T. E. Blackwell, Washington University.

Executive Committee: A. W. Peterson, University of Wisconsin; Lawrence R. Lunden, University of Minnesota; H. H. Brooks, DePauw University; William B. Harrell, University of Chicago.

Eastern Association

President: R. C. Magrath, University of New Hampshire; vice president: George E. Van Dyke, Syracuse University; secretary-treasurer: Boardman Bump, Mount Holyoke College.

Executive Committee: Samuel F. Agnew, Western Reserve University; Morris Cochran, Brown University; J. G. Vann, North Carolina State College; Don C. Wheaton, Sweet Briar College; Ervin T. Brown, Rollins College.

Southern Association

President: W. Wilson Noyes, University System of Georgia; first vice president: George R. Kavanaugh, Berea College; second vice president: W. T. Ingram, Alabama Polytechnic Institute; third vice president: Howard MacGregor, Agnes Scott College; secretary-treasurer: Gerald D. Henderson, Vanderbilt University.

Executive Committee: Jamie Anthony, Georgia School of Technology; E. H. Fisher, Southeastern College; J. B. Paysinger, Columbia College; James F. Blair, Union College; C. B. Markham, Duke University.

Western Association

President: William Norton, University of California; vice president: Paul Walgren, Oregon State College; secretary-treasurer: William Brand, Stanford University.

Executive Committee: J. O. Lindstrom, University of Oregon; Nelson Wahlstrom, University of Washington; Reverend John Preston, University of San Francisco.

Association of Business Officers in Negro Colleges

President: G. Leon Netterville Jr., Southern University; vice president: Isiah Creswell, Fisk University; secretary: V. D. Johnston, Howard University; treasurer: Mark Birchette, Dillard University.

Executive Committee: Don A. Davis, Hampton Institute; Viola Means, South Carolina State College; L. H. Foster Sr., Virginia State College; W. A. Morgan, Bishop College.

Educational Buyers Association

President: Gerald D. Henderson, Vanderbilt University; vice president: Charles Hoff, University of Omaha; vice president: H. B. Bentsen, George Williams College; vice president, Rev. J. Leo Sullivan, Holy Cross College; treasurer: H. W. Loman, Pennsylvania State College; executive secretary: Bert C. Ahrens.

Association of Superintendents of Buildings and Grounds of Universities and Colleges

President: L. F. Seaton, University of Nebraska; vice president: Paul H. Elleman, Ohio State University; secretary-treasurer: A. F. Gallistel, University of Wisconsin.

Executive Committee: L. F. Seaton, University of Nebraska; Paul H. Elleman, Ohio State University; A. F. Gallistel, University of Wisconsin; Henry E. Pearson, Indiana University; John J. Colgate, University of Pennsylvania.

Association of College Unions

President: D. R. Matthews, University of Florida; vice president: Douglas O. Woodruff, University of Utah; secretary-treasurer: Edgar Whiting, Cornell University; editor: Porter Butts, University of Wisconsin.

American College Public Relations Association

President: Harold K. Schellenger, Ohio State University; vice presidents: research, E. Ross Bartley, Indiana University; membership, W. Henry Johnston, Colgate University; regions, Horace Renegar, Tulane University; radio, Elmer G. Sulzer, University of Kentucky; athletics, William H. Wranek, University of Virginia; secretary-treasurer: Max E. Hannum, Franklin and Marshall.

Publications: editor, Lorena Drummond, Southern Illinois Normal University; associate editor, Paul Faris, Hendrix College; business manager, Roy K. Wilson, National Education Association.

Convention: May 14-17, Coronado Hotel, St. Louis.

National Association of College Stores

President: Norman M. Gay, Boston University Book Stores; vice president: A. W. Littlefield, Barnes and Noble, Inc., New York City; immediate past president: E. C. Rather, University Cooperative Society, Austin, Tex.; directors: Fred Davis, The Citadel Canteen, Charleston, S. C.; John H. Jenkins, St. Louis University Book Stores, St. Louis; H. H. Hays, Berea College Store, Berea, Ky.; George Racine, Student Book Exchange, Evanston, Ill.; manufacturer's representative: Charles Lofgren, Sanford Ink Co., Chicago; executive secretary: Russell Reynolds, 189 W. Madison St., Chicago.

Dr. Francis G. Cornell has been recently named education expert for the Senate committee on labor and public welfare. He was formerly director of research and statistics for the U. S. Office of Education.

Arthur E. Johnson has been appointed counselor of Wayne University's Office of Veterans' Affairs, according to a recent announcement by university officials. He has been a member of the personnel department staff of the university for two years.

Lois MacFarland has replaced *Mrs. Phyllis Tracy* as director of public relations at Colby Junior College, New London, N. H.

Fred C. Hess has been appointed director of public relations at Nebraska Wesleyan University; he will also be in charge of alumni activities. A Wesleyan graduate, Hess worked on weekly newspapers for five years and had nine years' experience in organizational publicity and free lance writing.

Rev. Joseph A. Lauritis, new director of public relations at Duquesne University, is a former editor of *Our Province,* a publication issued by the Holy Ghost Fathers of the United States Province.

Wayne L. Fleenor, present executive secretary of Michigan Conference Board of Education, has been named director of public relations, Albion College.

Virginia Oliver Allen, former president of Tennent College, died recently in Philadelphia. Tennent College trains young women for Christian service.

Dr. Ralph K. Hickok, former president of Western College for Women at Oxford, Ohio, died recently at his home in Aurora, N. Y. He had retired as president of the college in 1941 and was 67 years old at the time of his death.

Mary Elizabeth Lowndes, joint headmistress of Rosemary Hall, college preparatory school for girls at Greenwich, Conn., died recently at the age of 89. She first became a member of the school staff in 1907.

M. Louise Thomas, founder of Lenox Hall, a school for girls in St. Louis, died recently at the age of 85. She was one of the first women to be listed in "Who's Who."

PRODUCT INFORMATION

Information on the materials, equipment and supplies with which an institution is built, operated and maintained and which are used in its various departments is of vital interest to those charged with the business operation. College and University Business recognizes the importance of this information and believes it has rendered a real service by grouping manufacturers' announcements and new product descriptions into a separate part of the magazine. We believe this is an infinitely better plan than to mix such information through the editorial pages where it becomes obscure and confusing.

You will find manufacturers' advertisements from pages 41 through 67. Pages 68-72 contain descriptions of new products and items of interest. Further details on any product advertised or described may be obtained without obligation and with a minimum of effort by use of the postcard below.

INDEX TO ADVERTISERS ON FOLLOWING PAGE

USE THIS CARD

This card is detachable and is provided for your convenience in obtaining information on all items advertised in this issue or described in the "What's New" Section. See reverse side.

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May, 1947

Please ask the manufacturers, indicated by the numbers I have circled, to send further literature and information provided there is no charge or obligation.

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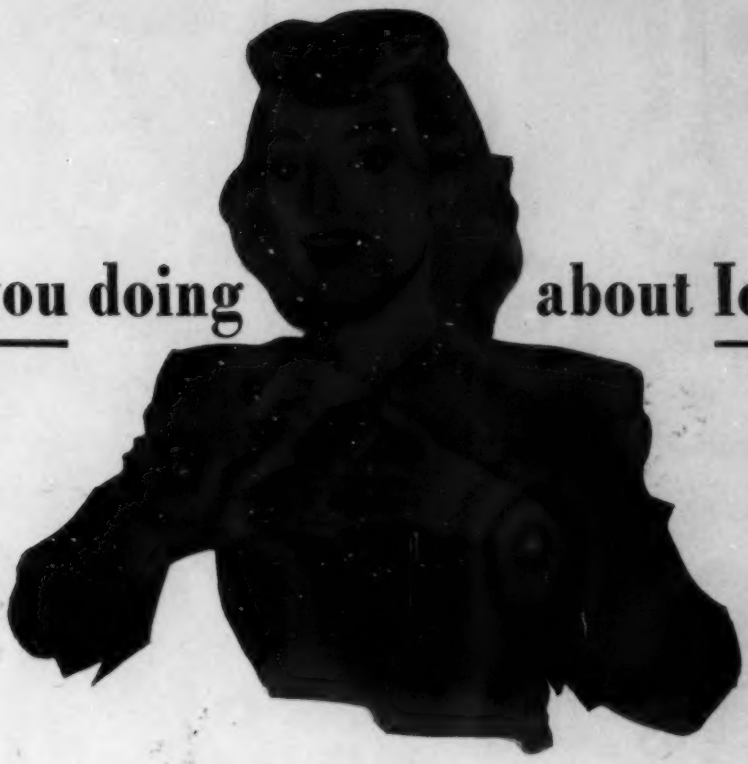
NAME _____ TITLE _____

INSTITUTION _____

ADDRESS _____ CITY _____ ZONE _____ STATE _____

what are you doing about Ice Cream?



If you aren't selling it at all—you should.

If you aren't selling as much as you would like—you can.

If you aren't making enough profit—you could.

When you freeze your own ice cream with a Mills Counter Freezer, both sales and profits increase without raising the price to your customers. You maintain your own controls over quality, costs, and sales price. You build prestige for all your merchandise and services through the sale of superior ice cream bearing your own name and brand.

Neither the investment in equipment nor the labor of production is great. The returns, however, are. May we tell you more about Mills Ice Cream Equipment?

Mills Industries, Incorporated

Dept. 524, 4100 Fullerton Avenue, Chicago 39, Illinois

MAKERS OF MILLS MASTER ICE CREAM FREEZERS AND HARDENING CABINETS

..*Unequalled for Beauty and Long Life*

Wood is remarkable for its strength and lightness. Engineers find it a superior material where high resistance to bending or compression is needed. Because of these qualities wood, through the ages, has had no equal as a material for fine furniture.

Not only is wood unequalled for a strength that gives long life to furniture . . . it is also unequalled for *beauty*. Wood, when fashioned and formed, polished and finished, possesses in a high degree a charm comparable to that which inspires man's admiration for fine paintings and objets d'art.

Carrom, however, does still more with wood than capture its beauty and utilize its strength in the fine furniture Carrom craftsmen produce. Carrom fine wood furniture is made exclusively for institutional use. By the extra care employed in selecting and seasoning hardwoods, forming posts, legs, bed stretchers and other vital parts from solid stock, and fitting joints securely, Carrom gives you institutional furniture unequalled for serviceability.

When you select furniture for your institution, do so with a view to permanence, beauty and economy. Choose Carrom Fine Wood Furniture made by craftsmen who "build for the decades."

CARROM INDUSTRIES, INC., LUDINGTON, MICH.

An Example of Carrom Strength

Carrom bed posts are solid throughout, one piece from end to end, not "built up" but turned from a single, solid piece of Northern Hard Birch not less than 2½ inches square. Unnecessary strength? We think not. For, if the need ever arises, the margin of extra strength is there. Carrom construction withstands *abuse* as well as normal *use*.

CARROM

WOOD FURNITURE FOR COLLEGE SERVICE

3 cheers for

Sampson & Sandow Bath Towels

They're both back in the Lineup!

SAMPSON ribbed and SANDOW plain weave terry bath towels are getting hearty cheers from critical buyers for their sturdiness, long-wear and extra-absorbency. Ask our nearest representative for information, or write:

H. W. BAKER LINEN CO.

315-317 Church St., New York 13, N. Y. and ten other cities

Est. 1892

Oldest and largest organization of its kind in the U. S.

Dead Insects DO TELL TALES!

Outside of their own kind possibly, nobody mourns the loss of destructive insect pests. *Dead*, they spin a tale of heightened morale, increased efficiency and sanitary safe-guarding of product.

Dead, they also bear strong testimony to the effectiveness of a double-barreled team that spells sheer murder to insects of almost every kind...West *Vaposector Fluid* dispersed by the *new*, streamlined West VAPOMAT.

Just *one* filling of the West Vapomat with Vaposector Fluid will effectively control *roaches and similar crawling insects* in areas of 50,000 cubic feet. Will also achieve a "Positive Kill" of *flying* insects in areas of 500,000 cubic feet!

Completely automatic, the West Vapomat is electrically operated . . . light, easy and economical to use. Simply fill, set the time clock, and plug into AC or DC outlet.

Especially designed for effective use in electric sprayers, West Vaposector Fluid comes in several formula variations to meet the specific needs of every industry. Non-combustible, it's harmless to everything but insect pests.

Fill in the coupon below. One of West's 475 trained representatives will be glad to explain this more effective method of pest control. No obligation!

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WEST Disinfecting Company

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We are interested in a demonstration of the new West VAPOMAT ☐ Please send Literature ☐

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LARGE COLORFUL WALL CHARTS

completely illustrating the three basic types of instrument movements...Phantom views showing details of construction and operation.

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Notebook-size reproductions of the large wall chart. Available for distribution to individual students.

MONOGRAPH NUMBER 3, ON ELECTRICITY

covers suggested approaches to teaching this subject in secondary electrical, electronics and science classes.

In writing for these teaching aids simply state school and class in which they will be used. Weston Electrical Instrument Corporation, 687 Frelinghuysen Avenue, Newark 5, New Jersey.

WESTON *Instruments*

PANEL, PORTABLE, AND LABORATORY INSTRUMENTS • TUBE CHECKERS
TEST EQUIPMENT • ILLUMINATION METERS • SENSITIVE RELAYS
THERMOMETERS • PHOTRONIC CELLS

YES, and there's no question about it! For, great as have been the advances in education, comfort has definitely kept pace to say the least.

Today even the smaller schools enjoy the advantages of even and correct temperature, with fresh clean air regardless of weather conditions outside — thanks to Minneapolis-Honeywell automatic temperature controls. This means that students are alert — able to absorb today's modern teachings and less apt to suffer from colds and other ills. It means, too, that fuel bills are kept at a minimum, because Honeywell control eliminates overheating and consequent fuel waste.

There is a Honeywell control system for every school and college building — old or new — large or small. The Honeywell representative in or near your city will gladly show you the advantages of Honeywell automatic temperature control for your buildings. Call him or write Minneapolis-Honeywell Regulator Co., 2616 Fourth Ave. So., Minneapolis 8, Minnesota. In Canada: Toronto 12, Ontario.

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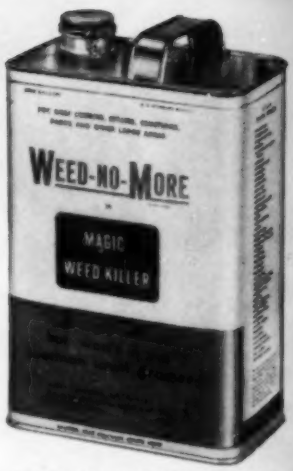
CONTROL SYSTEMS

For More Effective Weed Control with 2,4-D

WEED-NO-MORE 40



Available in 1-gallon and 5-gallon cans, 55-gallon drums

AMERICA'S NO. 1 WEED KILLER

IT'S EFFECTIVE! The ester formulation of 2,4-D is recognized by authorities as being more effective over a wider range of weeds and conditions than other types of 2,4-D. Weed-No-More is the original butyl ester formulation of this selective weed killer.

IT'S ECONOMICAL! One gallon of Weed-No-More 40 concentrate makes 400 gallons of spray, enough to treat two acres. Weed-No-More's butyl ester formula—plus a special emulsifying agent—makes for better adherence to broadleaved weeds and faster absorption by the weed plant, thus producing quicker, surer, and more effective killing action.

IT'S AVAILABLE NOW! Many of America's best-known golf courses, parks, cemeteries, and schools now use Weed-No-More 40 regularly for beautiful weed-free turf. Safe to use—easy to use—assures savings of hundreds of dollars (on many golf courses, thousands of dollars) compared with previously used methods of weed control.

For full information, phone your local dealer, or write any of the companies listed below.

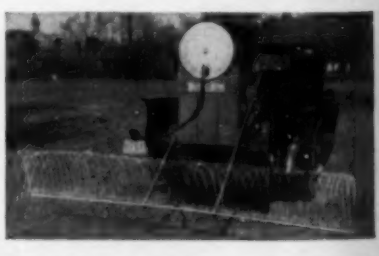
Write for Free Movies!
Informative 17-minute 16mm full-color sound movie presents actual proof of the remarkable killing action of Weed-No-More. Available for entertainment showings to committees, board meetings. Write Film Dept. D-5, 12th Floor Midland Bldg., Cleveland, Ohio.

COVER THE EARTH

PRODUCTS OF
SHERWIN-WILLIAMS RESEARCH

Can't Get Spray Equipment?

To help you until you can obtain delivery of spray equipment, Sherwin-Williams Research has developed a 50-gallon sprayer that can be easily built in your shop for under $40. For *free* plans and specifications, write Dept. D-5, 12th Floor Midland Bldg., Cleveland, Ohio.



Acme White Lead & Color Works, Detroit • W. W. Lawrence & Co., Pittsburgh
The Lowe Brothers Co., Dayton • John Lucas & Co., Inc., Philadelphia • The Martin-Senour Co., Chicago
Rogers Paint Products, Inc., Detroit • The Sherwin-Williams Co., Cleveland

Improved 16mm. sound projection

"Premier-20"

16MM. SOUND PROJECTOR

Close-up of new swing-out gate, showing gate in open position

The new "Premier-20" embodies many advanced features which combine to create new standards of 16mm. sound performance . . . convenience . . . and efficiency of operation. The new swing-out gate, shown above, permits easy cleaning of the aperture plate and pressure shoe . . . without ever disturbing the lens focus.

New Richer Tone Quality—The latest 12-inch Jensen Permanent Magnet Dynamic Speaker reproduces sound faithfully, realistically . . . has adequate power for moderate size auditoriums.

Streamlined Carrying Cases—Rugged . . . scratch-resistant . . . easy to clean, they offer complete protection for your Ampro projection equipment.

New Ampro Slide and Filmstrip Projector

New from every angle, this Ampro Model 30-D Projector for 2"x 2" slides and 35mm. filmstrips is ideally suited for classroom use. Simple to operate . . . with curved film guideways to guide filmstrip in exact position for crisp, brilliant pictures. Automatic snap-action, self-centering slide carrier assures perfect focus . . . with one hand operation. Quick tilting . . . sharp, clear reproduction . . . lift-off carrying case . . . many other outstanding features.

Amproslide Model 30-D

AMPRO

8mm. Silent • 16mm. Silent
16mm. Sound-on-film • Slide Projectors
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Mail coupon today for illustrated circulars giving full details, specifications and prices on these as well as other Ampro classroom projectors . . .

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FOLDING CHAIRS

$2.95 All metal, comfortable saddle seat. Riveted throughout, brown finish. Sets up — stores easily. Packed 4 to carton. No. D1-605.

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TELKEE

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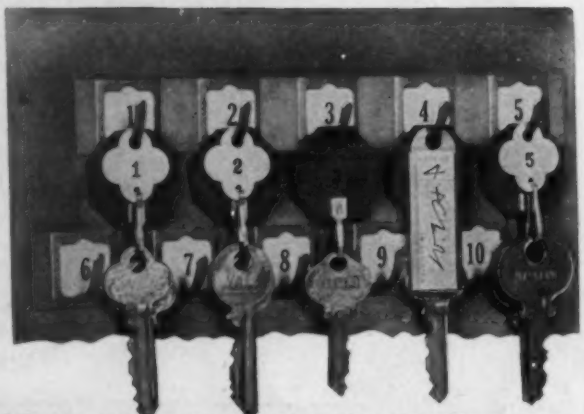

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A complete indexing system for the care of keys:

1 **TELKEE** is a tried and proven Visible Key-*Filing*—Key *FINDING* System.

2 Whether there are a few keys or thousands of keys — **TELKEE** is simple and effective.

3 It is the perfect system for knowing your keys — knowing where they are when you want to use them.

4 **TELKEE** retains a Reserve-Pattern key — never loaned. Tells you to whom other keys have been loaned.

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6 New instruction booklet based on 14 years' experience makes **TELKEE** easy to set up and operate.

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SAF-T-KLENZ

not a general purpose cleaner but
DEVELOPED SPECIFICALLY FOR removing

RUST STAINS
LIME DEPOSITS
SOAP OIL
BODY GREASE
ALGAE FORMATION
from

SWIMMING POOLS, Shower Rooms, Steam Rooms, Porcelain Fixtures.

Leaves floors and decks practically slip-proof. Minimizes conditions that breed and spread infectious germs.

USED FROM COAST TO COAST FOR 33 YEARS.

The action of secret chemicals cleans quickly even where hard rubbing with ordinary cleaners has failed. You simply sprinkle Saf-T-Klenz on a damp surface, wait a minute or two, scrub or mop lightly, and flush with clear water. Harmless to hands, clothing, floor or drains. Unscented. No carbolic or disinfectant smell. Comes in economical, concentrated dry powder form.

Try Saf-T-Klenz for 30 days. If not entirely satisfied we will cancel the invoice. You won't even be asked to return the unused portion.

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343 Tenth Street, Toledo 2, Ohio

16 mm Sound Motion Picture Projector

The new model "60"

VICTOR

Victor's new "60"—streamlined in design, refined in performance. Truly a triumph in 16 mm sound motion picture equipment—for schools, churches, home and industry.

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A DIVISION OF CURTISS-WRIGHT CORPORATION

Home Office and Factory: Davenport, Iowa

New York • Chicago

Distributors Throughout the World

MAKERS OF MOVIE EQUIPMENT SINCE 1910

Now Available!

ORDER THESE *NEW* CRUSADER Aluminum UTENSILS TODAY!

Your Dealer already has a supply, or can obtain shipment promptiy.

Roast Pans are provided in two weights and styles. Sauce Pots and Pans of *Medium Weight* supplement the heavy Line. Medium Weight Double Boilers are other CRUSADER additions.

All CRUSADER Aluminum Utensils are seamless deep drawn, handles and trim are sturdy. CRUSADER Aluminum Ware is built for rugged use.

Compare, and you'll find CRUSADER quality and dollar value the best Aluminum Utensil buy.

ROAST PANS

Medium Weight

Catalog No.	Outside Dimensions, Inches
#19121	20⅞" x 12⅞" x 3"

Intide Dimensions, Inches
19⅝" x 11⅝" x 3"

ROAST PANS

Heavy Weight

Catalog No.	Outside Dimensions, Inches
#9121	19⅝" x 11⅝" x 4½"
#9123	20⅞" x 17⅜" x 4½"

SAUCE PANS

Medium Weight

Type	Catalog No.	Capacity Quarts
Medium	#19148	4½
	#19150	6½
	#19155	10
Deep	#19250	7½
	#19255	13½

SAUCE POTS

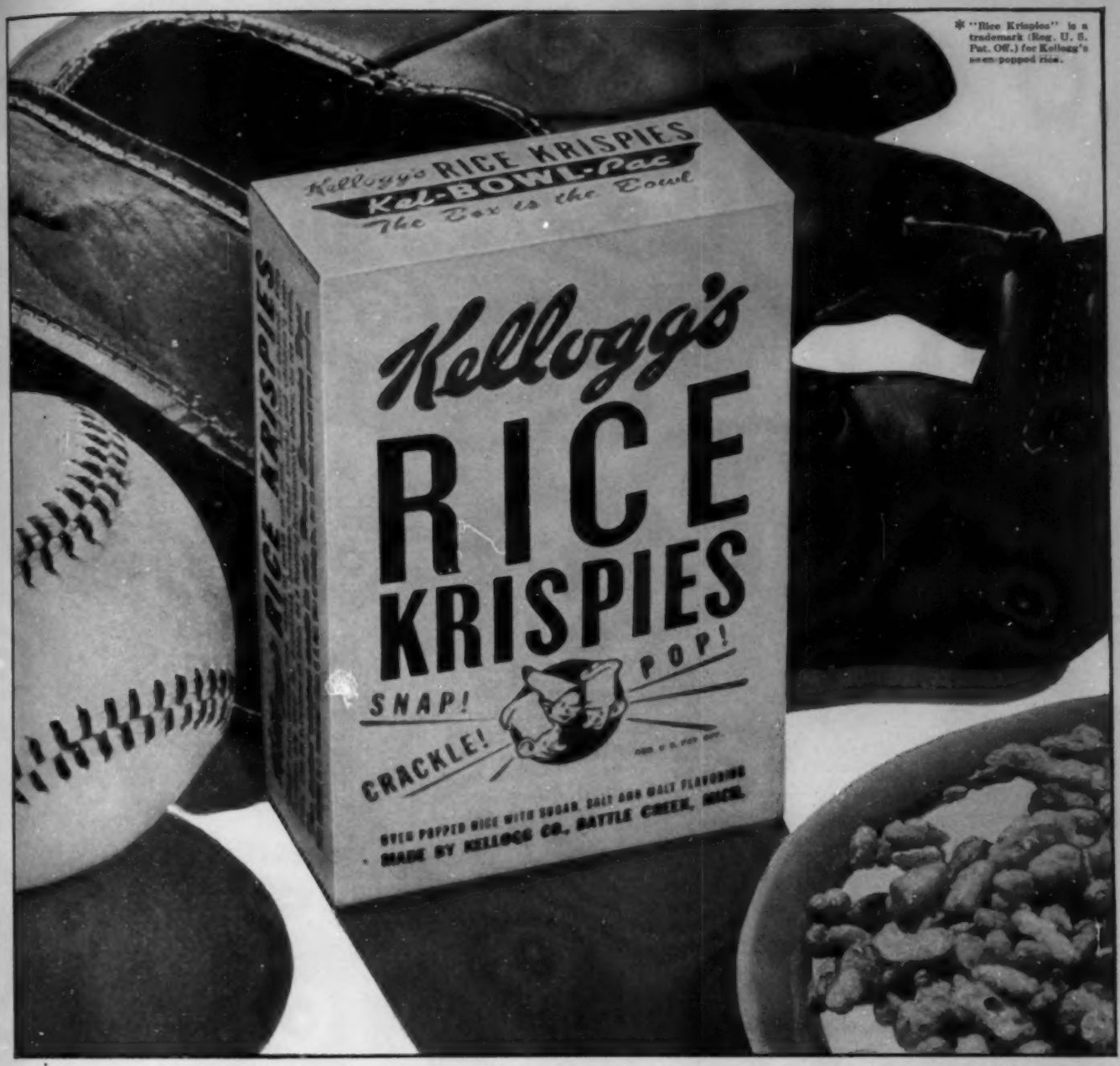
Medium Weight

Type	Catalog No.	Capacity Quarts
Medium	#19548	4½
	#19550	6½
	#19555	10
Deep	#19650	7½
	#19655	13½

DOUBLE BOILERS—*Medium Weight*

Catalog No.	#19612	#19618	#19624
Inset Capacity, Qts.	10	13	15

LALANCE & GROSJEAN MFG. CO., WOODHAVEN 21, N. Y.



* "Rice Krispies" is a trademark (Reg. U. S. Pat. Off.) for Kellogg's oven-popped rice.

Home-Town Stuff

MOST students in your school have been eating Kellogg's Cereals since they were knee-high to a grasshopper. For, back in their home towns and villages, Kellogg's is the clear-cut favorite over any other brand of cereals.

Take Kellogg's Rice Krispies for example. It outsells all other ready-to-eat rice cereals combined. Naturally, the familiar flavor of this famous cereal is "home-town stuff!"

Many of your undergraduates were raised on Kellogg's Rice Krispies. Give it to them often in the handy individual size that students go for.

RICE KRISPIES* • KELLOGG'S CORN FLAKES • PEP • KELLOGG'S 40% BRAN FLAKES • KELLOGG'S ALL-BRAN • KELLOGG'S RAISIN BRAN FLAKES • KRUMBLES • KELLOGG'S SHREDDED WHEAT

MOST STUDENTS LIKE *Kellogg's* MOST

THE GREATEST NAME IN CEREALS

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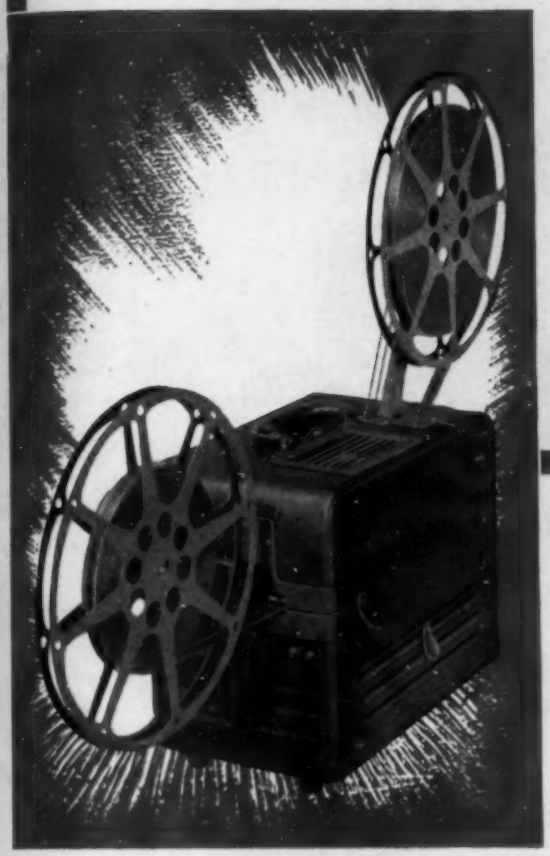

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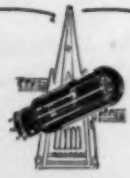

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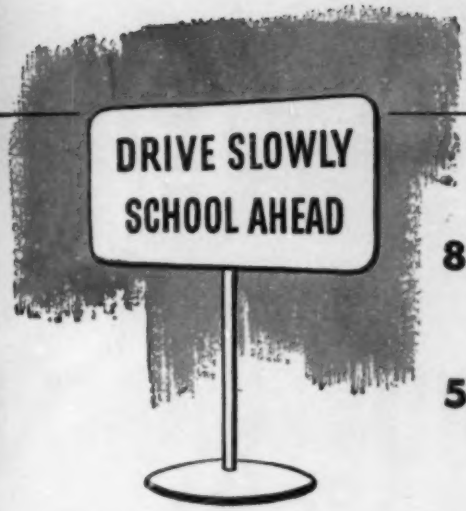

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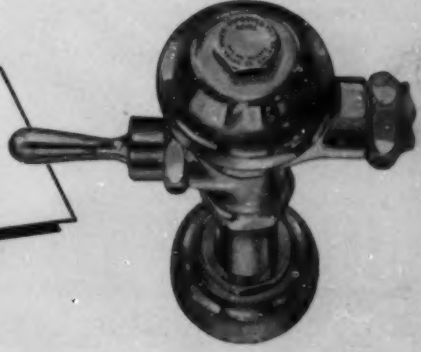

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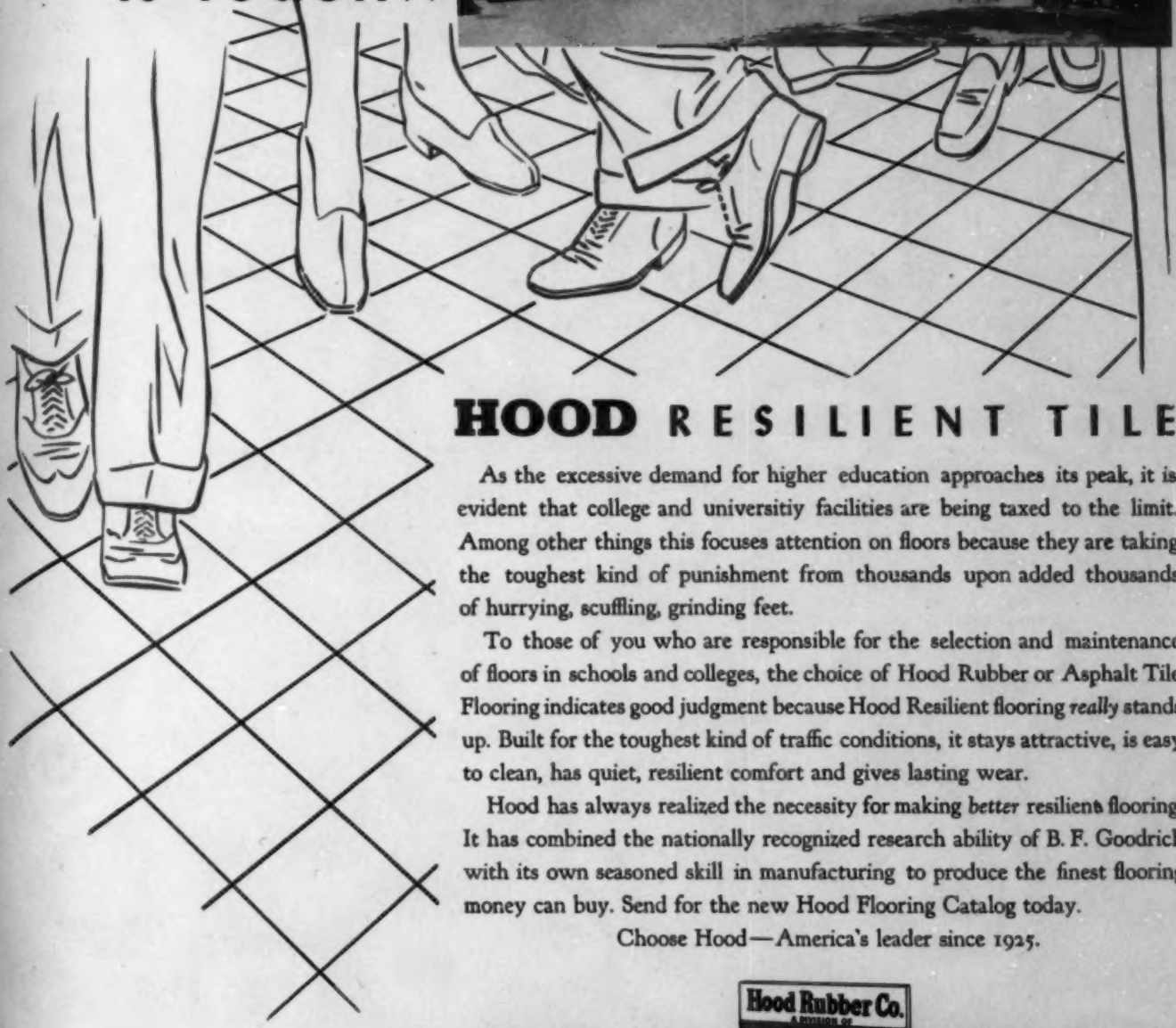

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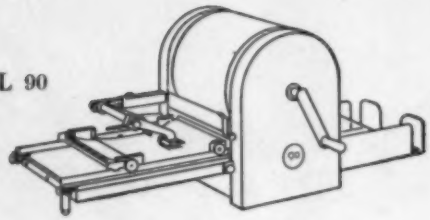

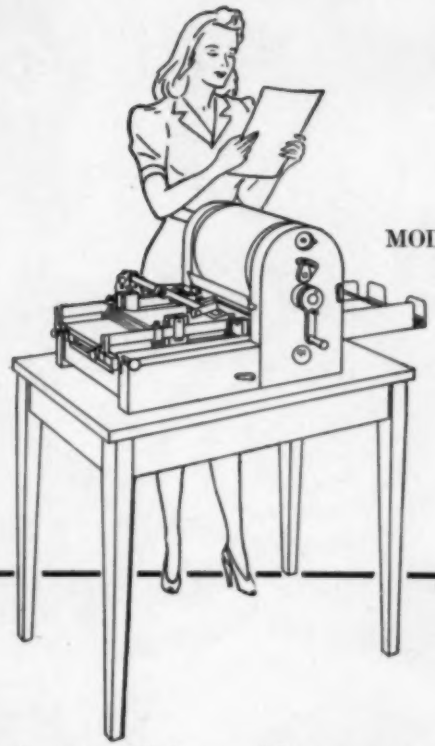

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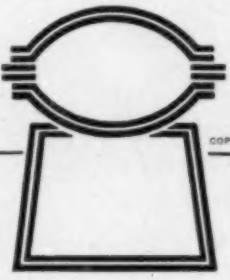

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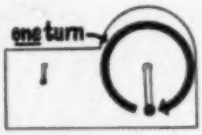

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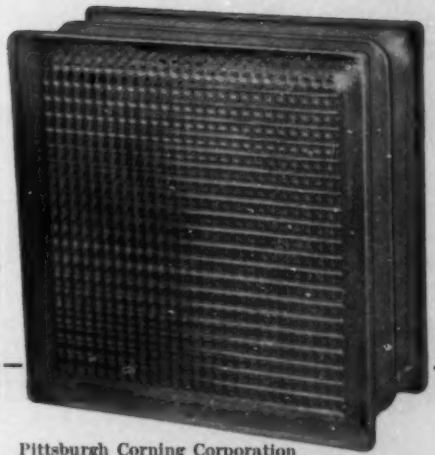

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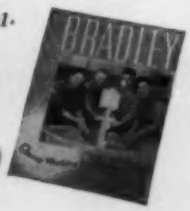

BRADLEY multi-stall showers

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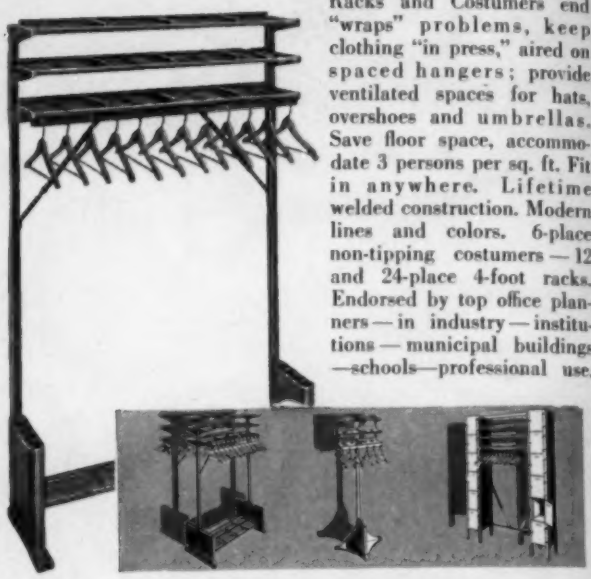
END ALL WRAPS PROBLEMS



Office VALET Wardrobe Racks and Costumers end "wraps" problems, keep clothing "in press," aired on spaced hangers; provide ventilated spaces for hats, overshoes and umbrellas. Save floor space, accommodate 3 persons per sq. ft. Fit in anywhere. Lifetime welded construction. Modern lines and colors. 6-place non-tipping costumers — 12 and 24-place 4-foot racks. Endorsed by top office planners — in industry — institutions — municipal buildings —schools—professional use.

Write for Bulletin No. H-16

VOGEL-PETERSON CO.
624 South Michigan Ave., Chicago 5, U.S.A.

SERVICE

Between editorial material and advertising pages in this and every issue —there's a detachable, postage prepaid card . . . to help you get product information on one or a dozen items with a minimum of effort and time. As you read the advertising pages and the descriptions in the "What's New" section, check the items that interest you . . . use the card. Sign it, mail it. The manufacturer of each item checked will be asked to send you complete details, no charge, no obligation.

COLLEGE and UNIVERSITY BUSINESS

CAR-NA-VAR VACUUM CLEANER

...According to Independent Testing Laboratory Report!

That's the remarkable performance turned-in by Car-Na-Var in recent tests conducted by an authoritative, independent university organization. Yes, of all cleaners tested, the new, silent Car-Na-Var Vacuum Cleaner *removed more dirt per minute than any other machine!*

Never before has a portable heavy-duty vacuum machine offered such powerful cleaning action plus such quiet, efficient operation. Designed for both "wet" and "dry" pick-up, the new, silent Car-Na-Var is the ideal machine for hospitals, hotels, schools, offices and other buildings where fast, quiet, efficient cleaning is essential. Reversible squeegees *inside* the nozzle—an exclusive Car-Na-Var feature—helps increase cleaning efficiency! New compact design makes the Car-Na-Var easy to use . . . easy to keep clean. Sturdy construction means trouble-free operation . . . long life.

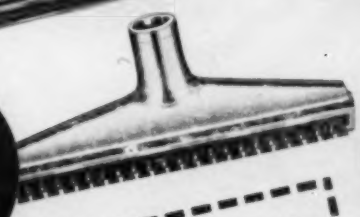
Write for free circular that fully describes this remarkable Car-Na-Var Vacuum Cleaner.

CONTINENTAL CAR-NA-VAR CORP.
1645 East National Avenue Brazil, Indiana

...removes more dirt per minute than any other machine tested."

RUBBER OR BRASS SQUEEGEE FOR "WET" PICK-UP

FELT SQUEEGEE OR BRUSH FOR "DRY" PICK-UP



IMMEDIATE DELIVERY!
ORDER NOW . . .
PRODUCTION IS LIMITED!

Adaptable for Blowing

WHAT'S NEW. . . . . .

The easiest way to get more information about the new products described in this section is to use the postage paid card opposite page 40. Just circle the key number on the card which corresponds with the number in the headline of each item. COLLEGE and UNIVERSITY BUSINESS will send your request to the manufacturer.

"What to Do With the Empties" CUB 237

No Problem With These Cafeteria Tray Racks

The frustrating question of what to do with the tray is no problem in cafeterias serviced with "Tray-A-Way" racks, as shown in the accompanying illustration. Patrons "know" where to put their empty trays — they simply slide them into the racks attached at the base of the back legs of the dining chairs. Moreover, this simple device speeds up the work of employes in returning the "empties" to the supply line. No longer do they have to look for trays on chair seats, against chair and table legs, against walls and on table tops or any other place where patrons spotted "emergency landings." Too, their installation adds to the attractiveness of the cafeteria in the way of orderliness. Said to be durable, sanitary and inexpensive, the racks are made of two transparent, semirigid, plexiglas holders and can be attached to regulation bent wood or metal chairs.—*Par Manufacturing Company, 20 East Jackson Boulevard, Chicago 4, Ill.*

Planned Daylighting CUB 238

For Classrooms Is Subject of New Book

As the problem of lighting in classrooms has existed since the first schoolhouse was built, executives of educational institutions from kindergarten to graduate school will welcome the new book, "Daylight in School Classrooms." Written by Hugh Paul of the Owens-Illinois Glass Company, the foreword expresses the twofold purpose of the book: to promote a better understanding of the use of daylight and to provide a method for introducing daylight into classrooms to obtain maximum efficiency with minimum brightness contrast regardless of weather conditions and building orientation.

Prepared from studies during the last six years in a special light laboratory at a midwestern university, neither the elimination nor the restriction of supplementary lighting is recommended nor are radical changes in building design or construction called for. Results are obtained by using scientifically designed daylight transmitting areas in combination with proper interior reflectivities. The author concludes that the daylight transmitting construction as recommended will provide daylight of satisfactory quality and quantity for more hours of the year than any other construction yet devised. Tables, charts and diagrams enable the reader to follow the author's findings.—*Insulux Products Division, Owens-Illinois Glass Company, Ohio Building, Toledo 1, Ohio.*

Putting "Home" CUB 239

In Homemaking Departments

To guide schools and colleges in creating a home atmosphere in their homemaking departments is the theme of the Bavinco Manufacturing Corporation's new "Book of Homemaking Equipment." Explaining the need for homelike surroundings, the book progresses through descriptions of the foods room, the clothing room, the all purpose room, the home living center and installation planning. Appropriate equipment from base units for foods to storage cabinets for aprons and charts is presented. Typical floor plans and photographs augment the copy. Those responsible for planning or equipping such departments are expected to find the book a valuable reference.—*Bavinco Manufacturing Corporation, 2745 Seneca Street, Buffalo 10, N. Y.*

Bulletin Describes Meters CUB 240

For Determining Steam Consumption

ADSCO Bulletin No. 35-80B on the ADSCO Rotary Condensation Meter is a new 12 page, 8½ by 11 inch brochure that gives complete details of construction and installation on seven sizes of meters with capacities from 250 to 12,000 pounds of condensate an hour. The meter is used to determine steam consumption by building or by department. A copy of the illustrated bulletin is available on request.—*American District Steam Company, North Tonawanda, N. Y.*

Toilet Room Environments CUB 241

Discussed in New Catalog

A new 21 page, six color catalog, describing toilet compartments, shower stalls, shower cabinets and wainscoting, has been prepared by the Sanymetal Products Company, Inc. Catalog 85 contains the latest structural and design improvements in the five principal types of compartments made by the company. In addition to a chart showing 15

standard colors, which permit attractive combinations in the treatment of toilet room environments, the booklet describes the advantages of Sanymetal Porcena (porcelain on steel), a material used exclusively by Sanymetal to finish toilet compartments, shower stalls and wainscoting. This material is ageless, fadeless, glass-hard, stainless, moisture-proof and rustproof and does not absorb odors, says the manufacturer. Specifications, construction details and available finishes for toilet compartments are presented in the catalog.—*The Sanymetal Products Company, Inc., 1701 Urbana Road, Cleveland 12, Ohio.*

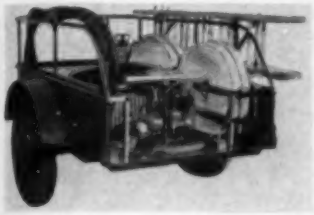
Bulletin Tells Specifications, CUB 242

Data on Corrosion Resisting Fans

"Durco Corrosion Resisting Fans," Bulletin 1102, is the title of an informative folder that will prove valuable now on any expanding campus or will keep nicely in its sturdy attractive cover for future reference. Included in its contents are general information on alloys, standard construction and applications, descriptions of various Durco fans and accessories and information on how to specify, how to order and how to select the right fan size.—*The Duriron Company, Inc., Dayton 1, Ohio.*

Portable Fire Department CUB 243

Offers Low Cost Protection



Described as a complete fire department in itself, the Porto-Pumper offers low cost fire protection to colleges and universities, particularly those institutions with trailer or other temporary housing projects located outside the city limits. Mounted on a sturdy, two wheeled trailer, the Porto-Pumper consists basically of the Porto-Pump, a gasoline driven, high pressure utility pump; 75 feet of supply hose and 250 feet of fire hose; an 18 foot, three section extension ladder; a fire axe, and a hand type of extinguisher. The unit can be attached easily to automobile, jeep or truck, or towed manually into places inaccessible to other equipment, and carries a 48 by 78 inch steel box body mounted on heavy duty tires of standard automobile center-to-center track. The overall width is 66 inches; the overall length, including a 40 inch tongue, 118 inches.

A four cycle, 5 h.p. gasoline engine is mounted integrally with the pump which is capable of delivering more than 40 U. S. gallons of water a minute at 120 pounds' pressure. Demountable in a fraction of a second, the Porto-Pump can be used at any distance from the Porto-Pumper as an independent unit. Any water source—hydrant, stream, pond, ditch or lake—serves the Porto-Pumper; a 1000 gallon tank mounted on the trailer body will make the unit self sufficient for water supply.—*Porto-Pump, Inc., 227 Iron Street, Detroit 7, Mich.*

Copyholder Available CUB 244

In Mountable and Portable Models

The new Underwood Copyholder is available in two models: one that can be mounted at the rear of the typewriter and one that is portable. The former can be collapsed, permitting the copyholder to be closed with the typewriter in a dropwell or secretarial desk for convenient storage when not in use. Designed for use alongside typewriters, accounting and other machines, the portable model can be moved easily to any position desired on the desk. By means of inexpensive extensions, the Underwood Copyholder can accommodate all copy in widths up to 36 inches.—*Underwood Corporation, 1 Park Avenue, New York 16, N. Y.*

News for Home Ec Departments CUB 245

School Range Replacement Plan

"Here's some really big news," says Magic Chef in outlining its new school program.

Available for home economics departments only, here's the gist of the plan: (1) The school will receive the newest Magic Chef gas range at the dealer's regular *wholesale* cost plus actual cost of installation; (2) for ten years the school will receive a new Magic Chef every two years —or as new models come out—without any cost to the school; (3) the school will have free, continuous servicing privileges and a service call for each fall and spring semester to assure classes dependable day-in, day-out cooking performance; (4) students will benefit through the use of the most modern equipment that Magic Chef's research engineers can provide.

A free folder containing complete details of this plan is available.—*American Stove Company, 4301 Perkins Avenue, Cleveland 3, Ohio.*

"Off the Floor" Jobs CUB 246

Easy to Reach From This Scaffold

For those "off the floor" jobs—whether it is a ceiling, over a stairway, a platform or a stage—there is a new scaffold to meet the need. Revolutionary in design, the Baker Scaffold is said to be easily maneuverable by one man through ordinary doorways and it can be carried on standard elevators without disassembling. It has no X-braces and thus can be moved about in occupied areas and over and around furniture with a minimum of disturbance or displacement. Each leg has a ball bearing, swivel type of caster with a hard rubber wheel to facilitate movement and prevent damage to floor surfaces. Although the scaffold can be quickly adjusted to uneven surfaces, the platform remains level, well balanced and safe, according to the manufacturer. For convenient storage, it nests

into a space little more than that required for an ordinary stepladder. Bulletin 3-647 provides additional information. —*Baker-Roos, Inc., 602 West McCarty Street, Indianapolis, Ind.*

"Two Station" Intercom — CUB 247

To Aid Busy School Executive

With compact speaker stations as small as an ordinary desk clock, RCA's first postwar intercom system is especially designed for such two station use as communication between the busy school executive and his assistant or secretary. The system features amplifier and speaker station in separate units, permitting off-the-desk location of the amplifier at any out of the way point and reducing speaker station size to a minimum. Conversation can be carried on at normal voice level with a flick of the two position switch; releasing the switch returns the intercom to "listen" position. The 3 inch speaker is so designed and refined as to eliminate hiss and hum, according to the manufacturer.

The system consists of two speaker stations, separate amplifier and 100 feet of interconnecting wire; if desired, up to five additional stations can be connected to the amplifier. It is said to be installed easily and to plug into any 110 volt A.C. or D.C. outlet.—*Radio Corporation of America, RCA Victor Division, Camden, N. J.*

Washroom Brochure — CUB 248

Aid in Planning and Maintenance

Findings of surveys made in more than 300,000 American washrooms have resulted in a new brochure containing many suggestions for improving personal service facilities. The outstanding feature is a spread of 16 pages of typical layouts, including large and small plant washrooms, locker rooms, school washrooms, lounges, supply closets, executive and office building washrooms and recreation rooms. James S. Hatfield, Philadelphia architect, acted as consultant and prepared the scale drawings.

The Scott Paper Company, which has the brochures ready for distribution through its Washroom Advisory Service, emphasizes the fact that control of traffic flow and ease and economy of maintenance were given full consideration by the consultants. The information presented is expected to be most valuable in its modern approach as a guide for architects and those connected with sanitation and maintenance in institutions and other public buildings.—*Washroom Advisory Service, Scott Paper Company, Chester, Pa.*

Chemical Coating — CUB 249

Increases Legibility of Blueprints

An improved chemical coating that makes possible a more nearly uniform coverage by blueprint solutions, that provides greater brilliance and color depth and that minimizes the graying effect caused by overexposure is announced by the Monsanto Chemical Company. Known as Mertone WB-2, the product is a silica aquasol and is used as a precoat on a paper that is subsequently coated with light, sensitive blueprint solutions. The Mertone precoat is applicable to all types of blueprint formulas and can be applied in paper mills and coating plants on the same machine used to apply the sensitizing solution. The H. P. Andrews Paper Company developed the use of the Monsanto silica aquasol as an exclusive license and the right to sublicense has been granted to Monsanto.—*Monsanto Chemical Company, St. Louis 4, Mo.*

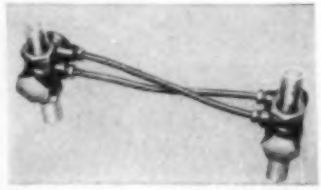
Floor Covering, Accessories — CUB 250

Presented in Colorful Catalog

"Tile-Tex Asphalt Tile—Floors That Endure" is the title of the latest catalog of the Tile-Tex Company, Inc., specialist in the manufacture of asphalt and composition floor tile and the accessories necessary to the proper installation of these products. Color illustrations vividly present the 1947 color range and suggested designs for both floor covering and wall covering. Specification data and descriptions of Tile-Tex Asphalt Base and Accessory Strips and of maintenance materials are included. Versatility in application of the products is stressed as is their high asbestos content which makes them highly fire resistant.—*The Tile-Tex Company, Inc., 1232 McKinley Avenue, Chicago Heights, Ill.*

Scalding, Sudden Chilling — CUB 251

In Shower Bath Eliminated by Control Valve



Guarding against variations in the selected temperature of running water regardless of sudden and drastic water pressure changes, the new Aquatemp control valve eliminates the danger of scalding or the discomfort of sudden chilling in a shower bath. Aquatemp is a pressure controlled valve always alert for instant action, according to its manufacturer. Sudden pressure drops occurring when water is turned on in the same room or building activate the new valve and cause it to balance hot and cold volume instantaneously at the selected temperature. T. W. (Tommy) Milton, veteran racing driver, and R. C. Griffith, Detroit engineer-inventor, developed Aquatemp; it can be installed with any type of shower fitting.—*The Milton-Griffith Company, 8619 Mack Avenue, Detroit 14, Mich.*

Combination Lawn Treatment CUB 252

Clears Out Weeds, Feeds Grass

A new combination lawn food and weed control compound has been developed that not only clears out the weeds but feeds the grass to thicker, fatter growth to fill in the openings left by dying weeds. Although this new commercial product has physical properties that make it easy to spread evenly, it coats weed leaves with enough fine powder to destroy root and all. Protein meal is included in the grassfood to produce a slow, long lasting supply of nitrogen and other important elements; diammonium phosphate, new in soil nutrient work, furnishes quick sources of nitrogen and phosphorus; potassium in the form of potash gives the grass tone and vigor.

The combination of weed eradicating and grass nourishing is reported to do more than either treatment by itself. Observation has shown that weed control alone may set grass back temporarily but that a simultaneous meal of the right lawn food will offset this effect. Some individuals have objected to extra mowing resulting from ordinary feeding. Oddly enough, although the turf treated was of better color and vigor, the grass did not grow as fast after the dual treatment. Slowly available nutrients in combination with the weed control are believed to bring about the delaying action.—*O. M. Scott & Sons Company, Marysville, Ohio.*

Wet or Dry CUB 253

These Surfaces Stay "Nonslip"

Schools and colleges considering floor treatments for stairways, lobbies, cafeterias, swimming pools, locker rooms and other localities requiring special attention will be interested in a new, illustrated folder, "Norton Floors: Non-Slip—Wet or Dry." Included in the presentation are descriptions of Alundum Ceramic Mosaic Tile, Alundum Aggregate for Terrazzo and Cement Floors and Alundum Stair and Floor Tile. The nonslip properties of these surfaces, even when wet, are emphasized, as are their qualities of beauty and durability.—*Norton Company, Worcester 6, Mass.*

Here's a Guide CUB 254

To Planning Vocational, Industrial Arts Units

Designed to function primarily as a helpful guide in the selection of suitable equipment for industrial and educational laboratories as well as vocational and industrial arts departments, a new 358 page catalog-handbook is announced by E. H. Sheldon and Company, manufacturer of fixed laboratory, hospital and vocational school equipment. Containing a completely illustrated listing of Sheldon products, the handbook is sectionalized and indexed to facilitate reference. One of its unusual features is the space devoted to suggestions for planning and laying out homemaking classrooms and vocational or industrial arts shops. A study of data supplied by the federal and state departments of education and on recommendations by leading home economists provided the basis for the suggestions on planning homemaking departments.—*E. H. Sheldon and Company, Muskegon, Mich.*

Sanding of Curved Surfaces CUB 255

Solved With Flexible Rubber Pad

To meet the demand for a pad that permits the sanding of irregular surfaces, Sterling Tool Products Company has developed a flexible sponge rubber pad that is said to allow sanding of extremely curved surfaces. Designed also for light sanding of sealer and filler coats and for polishing, the pad can be instantly attached to all Sterling 1000 Portable Electric Sanders. This attachment, the company's new steel case sanding kit and some of the many uses of Sterling Sanders are described in a new, illustrated, four page folder.—*Sterling Tool Products Company, 363 East Ohio Street, Chicago 11, Ill.*

Fire Resistive Fabrics CUB 256

Available in Wide Range of Designs, Colors

A new line of fire resistive and decorative fabrics has been announced by the Turner Halsey Company, selling agents for Plymouth Fabrics, Fall River, Mass., and Plymouth Fire-Guard Fabrics. The line is designed for use in schools and other public buildings to reduce fire and panic hazards. The material is a combination of noncombustible Fiberglas yarns and flameproofed cotton yarns.

Plymouth Fire-Guard Fabrics, the trade name under which they are manufactured, are aproximately 60 per cent glass and 40 per cent cotton and are available in a wide range of designs and colors. It is said they are highly resistant to fading; they drape in soft folds; they can be cut, sewed and ironed as easily as all cotton fabrics; they will not stretch. Moreover, they can be dry cleaned by ordinary dry cleaning processes without losing their fire resistive quality. Prices are on the level of other quality drapery fabrics.—*Turner Halsey Company, 40 Worth Street, New York, N. Y.*

New Handbook CUB 257

On Construction Data Available

The A. C. Horn Company, Inc., pioneer in the formulation and manufacture of materials and in the development of methods for the protection and decoration of

structures and for making them water resistant, has available a handy new booklet, "Horn Construction Data and Hand Book." Its completeness is indicated by the general index which lists sections on calking and glazing compounds, construction details, floor materials, how to measure flat surfaces, material tables, miscellaneous specialties, paints and coatings for both exteriors and interiors, waterproofings, dampproofings, admixtures and other products, and weights and measures tables.—*A. C. Horn Company, Inc., 43-36 Tenth Street, Long Island City 1, N. Y.*

Comfort Is Feature — CUB 258

Of Form Fitting Chrome and Leatherette Chair

Restful and custom built is the Ard Manufacturing Company's new form fitting chrome and leatherette chair No. HA4, shown in the illustration. Its spacious, form fitting seat is 19 inches wide and 19 inches deep; its gracefully curved back, 19 inches wide and 12 inches tall. For additional comfort, the arms are heavily upholstered; for durability, the framework is of triple plated chrome tubing; for beauty, the leatherette upholstery is available in a choice of colors, including Moorish brown, Moorish red and plain red.

Chair No. SA106C meets the same specifications of comfort, durability and beauty but takes a turn for the modernistic with its S-curved leg.—*Ard Manufacturing Company, P. O. Box 442, Evansville 3, Ind.*

Paint Stripper Works — CUB 259

On Vertical as Well as Horizontal Surfaces

Paint-Zip, a new, nonflammable, fast acting, liquid paint stripper, can be used on vertical as well as horizontal surfaces because of its clinging characteristics. Since it will not raise the grain, its manufacturer especially recommends it for wood but it is said to be equally effective for removing paints from all types of metals, as it will not cause oxidation or discoloration. Owing to its unsually slow rate of evaporation and vigorous penetrating action, Paint-Zip generally requires only one application despite the number of paint layers.

Paint-Zip contains no abrasives, gives off no dangerous fumes and is said to be so simple to use that even an inexperienced operator can obtain uniformly satisfactory results. It can be applied by swabbing with a brush, by a spray gun, by the flow-on method or by immersion, action starting immediately. Most paints require about five minutes; the most obdurate enamels, fifteen. Large sheets of paint can then be peeled off and the remainder quickly stripped off with steel wool or scraper. After wiping down with a rag soaked in Turco L-800, itself a mild paint stripper, all gums, films and residual matter are completely removed and the surface is ready for repainting without further processing.—*Turco Products, Inc., 6135 South Central Avenue, Los Angeles 1, Calif.*

Dishwater Analysis — CUB 260

Obtainable Free on Request

If an institution wants to know the efficiency of its present dishwashing compounds, the Du Bois Company will make a chemical analysis of a dishwater sample. All that is necessary is to request a sample bottle, fill it and provide the information asked on the accompanying form. The company will give a 10 point analysis and engineering interpretation free together with suggestions as to the practical application of the findings.—*The Du Bois Company, Cincinnati 3, Ohio.*

WANT ADVERTISEMENTS

The rates for want advertisements are: 10 cents a word; minimum charge, $2.50.
Address replies to COLLEGE AND UNIVERSITY BUSINESS, 919 N. Michigan Avenue, Chicago 11, Ill.

POSITIONS WANTED

Assistant Business Officer—Presently fraternity business adviser at small college; 49 months U. S. Army, separated 1946 as Captain; age 40, married, son age 3; B.A. 1928. Write Box CW17, COLLEGE AND UNIVERSITY BUSINESS.

Bursar-Treasurer and/or Business Manager—Twenty-five years' varied college administration experience; general and fund accounting, budgets, investments, building and ground maintenance, dining hall, bookstore; would like to become associated with an aggressive and well rated college where the president is seeking an efficient and qualified assistant to handle business and financial affairs. Write Box CW16, COLLEGE AND UNIVERSITY BUSINESS.

Bursar-Treasurer-Assistant Comptroller—Woman with extensive experience, knows college accounting and fund accounting; college graduate. Write Box CW12, COLLEGE AND UNIVERSITY BUSINESS.

Comptroller or Business Executive—Available for college or university position; experienced in budget control and accounting procedures, business management and executive work with college; can organize all departments; references can be furnished. Write Box CW10, COLLEGE AND UNIVERSITY BUSINESS.

Superintendent of Buildings and Grounds—Graduate architect, member A.I.A. and Association of Superintendents of Buildings and Grounds; 15 years' experience in complete charge of operation, management, maintenance; also architectural work in connection with repairs, alterations, additions and new buildings; available July 1, 1947. Write Box CW15, COLLEGE AND UNIVERSITY BUSINESS.

POSITIONS OPEN

Assistant Comptroller—Age 30-40; Pacific Northwest; superior accounting qualifications, preferably CPA, also managerial ability; permanent State Board of Higher Education position; give information regarding training, experience, present salary and references. Write Box CO8, COLLEGE AND UNIVERSITY BUSINESS.

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Sizes and models for every projection need

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DA-LITE SCREEN CO., INC.
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WE *Recommend*

You know the tea drinker. If he likes the tea he likes the meal—and will come back again and again. We know him, too. What's more, we know what will please him. Everything we have learned in sixty-four years as tea specialists we have put into Sherman Blend Exquisite Tea. You can serve Sherman Blend for less than a penny a cup. Do you know any other way in which a fraction of a penny can be so important?

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